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MEDICO-CHIRURGICAL TRANSACTIONS.

PUBLISHED BY

THE ROYAL

MEDICAL AND CHIRURGICAL SOCIETY

OF

LONDON.

VOLUME THE FORTY-SIXTH.

LONDON:
LONGMAN, GREEN, LONGMAN, ROBERTS, AND GREEN,
PATERNOSTER ROW.

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1863.

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OF LONDON.

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FOR THE SESSION OF 1863-64.

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THOMSON, ROBERT DUNDAS, M.D., F.R.S.

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1805. WILLIAM SAUNDERS, M.D.
1808. MATTHEW BAILLIE, M.D.
1810. SIR HENRY HALFORD, Bart., M.D., G.C.H.
1813. SIR GILBERT BLANE, Bart., M.D.
1815. HENRY CLINE.
1817. WILLIAM BABINGTON, M.D.
1819. SIR ASTLEY PASTON COOPER, Bart., K.C.H., D.C.L.
1821. JOHN COOKE, M.D.
1823. JOHN ABERNETHY.
1825. GEORGE BIRKBECK, M.D.
1827. BENJAMIN TRAVERS.
1829. PETER MARK ROGET, M.D.
1831. WILLIAM LAWRENCE.
1833. JOHN ELLIOTSON, M.D.
1835. HENRY EARLE.
1837. RICHARD BRIGHT, M.D., D.C.L.
1839. SIR BENJAMIN COLLINS BRODIE, Bart., D.C.L.
1841. ROBERT WILLIAMS, M.D.
1843. EDWARD STANLEY.
1845. WILLIAM FREDERICK CHAMBERS, M.D., K.C.H.
1847. JAMES MONCRIEFF ARNOTT.
1849. THOMAS ADDISON, M.D.
1851. JOSEPH HODGSON.
1853. JAMES COPLAND, M.D.
1855. CÆSAR HENRY HAWKINS.
1857. SIR CHARLES LOCOCK, Bart., M.D.
1859. FREDERIC CARPENTER SKEY.
1861. BENJAMIN GUY BABINGTON, M.D.
1863. RICHARD PARTRIDGE.

FELLOWS

OF THE

ROYAL MEDICAL AND CHIRURGICAL SOCIETY

OF LONDON.

EXPLANATION OF THE ABBREVIATIONS.

P.—President.	V.P.—Vice-President.
T.—Treasurer.	S.—Secretary.
L.—Librarian.	C.—Member of Council.

The figures succeeding the words *Trans.* and *Pro.* show the number of Papers which have been contributed to the Transactions or Proceedings by the Fellow to whose name they are annexed.

OCTOBER 1863.

Those marked thus (†) have paid the Composition Fee in lieu of further annual subscriptions.

Amongst the non-residents, those marked thus (*) are entitled by composition to receive the Transactions.

Elected

1841 *James Abercrombie, M.D., Cape of Good Hope.

1846 *John Abercrombie, M.D., Physician to the Cheltenham General Hospital, 13, Suffolk square, Cheltenham.

1851 *Henry Wentworth Acland, M.D., F.R.S., Honorary Physician to H.R.H. the Prince of Wales; Physician to the Radcliffe Infirmary; Regius Professor of Medicine, and Clinical Professor in the University of Oxford.

1847 Elisha Acosta, M.D., New York, U.S.

1842 William Acton, 17, Queen Anne street, Cavendish square. *Trans.* 1.

Elected

1851 John Adams, Surgeon to, and Lecturer on Descriptive and Surgical Anatomy at, the London Hospital; 4, St. Helen's place, Bishopsgate street. *Trans.* 3.

1852 William Adams, Surgeon to the Royal Orthopædic Hospital; 5, Henrietta street, Cavendish square. *Trans.* 2.

1837 *Ralph Fawsett Ainsworth, M.D., Physician to the Manchester Royal Infirmary; Cliff Point, Lower Broughton, Manchester.

1839 Sir Rutherford Alcock, K.C.B., K.C.T., K.T.S., H.M.'s Envoy Extraordinary and Consul-General in Japan. *Trans.* 1.

1826 James Alderson, M.D., F.R.S., Senior Physician to, and Lecturer on Clinical Medicine at, St. Mary's Hospital; 17, Berkeley square. S. 1829. C. 1848. T. 1849. V.P. 1852-3. *Trans.* 3.

1843 Charles James Berridge Aldis, M.D., Medical Officer of Health for St. George's, Hanover square; Senior Physician to the Surrey Dispensary; and Physician to the St. Paul and St. Barnabas Dispensary; 1, Chester terrace, Chester square. *Trans.* 2.

1850 Charles Revans Alexander, Surgeon to the Royal Infirmary for Diseases of the Eye; 6, Cork street, Bond street.

1836 Henry Ancell, 3, Norfolk crescent, Oxford square. C. 1847-8. *Trans.* 2.

1862 Edwyn Andrew, M.D., Windsor House, Shrewsbury.

1862 James Andrew, M.B., Warden of the College, St. Bartholomew's Hospital.

1820 Thomas Andrews, M.D., Norfolk, Virginia.

1819 †James Moncrieff Arnott, F.R.S., Surgeon Extraordinary to H.M. the Queen; 2, New Burlington street. L. 1826-8. V.P. 1832-3. T. 1835-40. C. 1846, 1855-6. P. 1847-8. *Trans.* 8.

1817 †John Ashburner, M.D., F.L.S., 7, Hyde park place, Cumberland gate. C. 1821, 1830-1.

1851 Thomas John Ashton, 31, Cavendish square.

Elected

1825 †Benjamin Guy Babington, M.D., F.R.S., Physician to the Asylum for Deaf and Dumb; Consulting Physician to the German Hospital, and to the City of London Hospital for Diseases of the Chest; 31, George street, Hanover square. C. 1829. V.P. 1845-6. T. 1848. P. 1861-2. *Trans.* 2.

1838 Francis Badgley, M.D., Holyrood House, Great Malvern.

1820 *John Badley, Dudley, Worcestershire.

1840 William Bainbridge.

1836 Andrew Wood Baird, M.D., Physician to the Dover Hospital; Dover, Kent.

1851 *Alfred Baker, Surgeon to the Birmingham General Hospital, and Lecturer on Surgery at Sydenham College; Cannon street, Birmingham.

1839 †Thomas Graham Balfour, M.D., F.R.S., Deputy Inspector-General of Hospitals; 10, Sumner place, Onslow square, Brompton. C. 1852-3. V.P. 1860-1. *Trans.* 2.

1848 Edward Ballard, M.D., Medical Officer of Health for Islington; 7, Compton terrace, Upper street, Islington. *Trans.* 2.

1849 Thomas Ballard, M.D., 10, Southwick place, Hyde park.

1847 Andrew Whyte Barclay, M.D., Physician to, and Lecturer on Materia Medica at, St. George's Hospital; Medical Officer of Health for Chelsea; 23A, Bruton street, Berkeley square. S. 1857-60. L. 1861-2. *Trans.* 2.

1848 Edgar Barker, 9, Oxford square, Hyde park.

1862 Edgar Barker, jun., Surgeon to the Western General Dispensary; 5, Albion place, Hyde park square.

1833 †Thomas Alfred Barker, M.D., Senior Physician to, and Lecturer on Clinical Medicine at, St. Thomas's Hospital; 27, Wimpole street. C. 1844-5. V.P. 1853-4. T. 1860-2. *Trans.* 6.

1843 Thomas Herbert Barker, M.D., F.R.S.E., Harpur place, Bedford.

Elected

1847 George Hilaro Barlow, M.D., Physician to, and Lecturer on Clinical Medicine at, Guy's Hospital; Physician to the Magdalen Hospital; 12, Union street, Southwark. C. 1859.

1861 Robert Barnes, M.D., Obstetric Physician to the London Hospital; Obstetric Physician to, and Lecturer on Midwifery at, St. Thomas's Hospital, and Physician to the Royal Maternity Charity; 46, Finsbury sq. *Trans.* 3.

1840 Benjamin Barrow, Surgeon to the Royal Isle of Wight Infirmary; Clifton House, Ryde, Isle of Wight.

1859 Richard Barwell, Assistant-Surgeon to, and Lecturer on Comparative Anatomy at, the Charing Cross Hospital; 22, Old Burlington street. *Trans.* 1.

1844 William Richard Basham, M.D., Senior Physician to, and Lecturer on Medicine at, the Westminster Hospital; 17, Chester street, Grosvenor place. S. 1852-4. C. 1860-1. *Trans.* 2.

1862 Pierre Victor Bazire, M.D., 29a, Grosvenor street.

1862 Lionel Smith Beale, M.B., F.R.S., Professor of Physiology and General and Morbid Anatomy in King's College, London, and Physician to King's College Hospital; 61, Grosvenor street.

1860 Adam Bealey, M.D., M.A. Camb., Physician to the Royal General Dispensary, St. Pancras; 27, Tavistock square.

1841 George Beaman, M.D., 3, Henrietta street, Covent Garden.

1856 Amos Beardsley, Bay villa grange, Newton in Cartmel, Lancashire.

1836 William R. Beaumont, Consulting Surgeon to the Toronto General Hospital, late Professor of Surgery in the University of King's College, Toronto, Canada West. *Trans.* 3.

1840 Charles Beevor, 41, Upper Harley street.

1858 William Chapman Begley, M.D., Middlesex County Lunatic Asylum, Hanwell.

1819 †Thomas Bell, F.R.S., F.L.S., the Wakes, Selborne, Hants. C. 1832-3. V.P. 1854. *Trans.* 1.

Elected

1847 James Henry Bennet, M.D., Physician-Accoucheur to the Royal Free Hospital; the Ferns, Weybridge, and Mentone.

1845 Edward Unwin Berry, 7, James street, Covent garden.

1820 Stephen Bertin, Paris.

1815 †Archibald Billing, M.D., F.R.S., Member of the Senate of the University of London; 6, Grosvenor gate. C. 1825. V.P. 1828-9.

1827 William Birch, Barton-under-Needwood, Staffordshire. *Trans.* 2.

1850 James Bird, M.D., 27, Hyde park square.

1855 Peter Hinckes Bird, F.L.S., 1, Norfolk square, Hyde park.

1856 William Bird, Surgeon to the West London Hospital; 7, George street, Hanover square.

1849 Edmund Lloyd Birkett, M.D., Physician to the City of London Hospital for Diseases of the Chest; 48, Russell square.

1851 George Birkett, M.D., Lecturer on Medical Jurisprudence at the Charing Cross Hospital; Northumberland House, Green lanes, Stoke Newington.

1851 John Birkett, F.L.S., *Secretary*, Surgeon to, and Lecturer on Surgery at, Guy's Hospital; 59, Green street, Grosvenor square. L. 1856-7. S. 1863. *Trans.* 4.

1846 Hugh Birt, British Naval Hospital, Valparaiso, Chili.

1843 Patrick Black, M.D., Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital; 11, Queen Anne street, Cavendish square. C. 1856.

1847 George C. Blackman, M.D., Professor of Surgery in the Medical College of Ohio; New York, U.S.

1840 Peyton Blakiston, M.D., F.R.S., St. Leonard's-on-Sea.

1845 Henry Blenkinsop, Senior Surgeon to the Warwick Dispensary; Jury street, Warwick.

1823 Louis Henry Bojanus, M.D., Wilna.

1846 John Ashton Bostock, Hon. Surgeon to H.M. the Queen; Surgeon-Major, Scots Fusilier Guards; 54, Chester square, Belgravia. C. 1861-2.

Elected

1863 Francis Bowen, M.D., Staff-Surgeon; 62, Upper Berkeley street, Portman square.

1841 William Bowman, F.R.S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields; 5, Clifford street, Bond street. C. 1852-3. V.P. 1862. *Trans.* 3.

1862 William Henry Brace, Surgeon to the Bath United Hospital; 1, Gay street, Bath.

1857 William Brinton, M.D., Physician to, and Lecturer on Physiology at, St. Thomas's Hospital; 24, Brook street, Grosvenor square.

1851 Bernard Edward Brodhurst, Assistant-Surgeon to St. George's Hospital; Assistant-Surgeon to the Royal Orthopædic Hospital; 20, Grosvenor street. *Trans.* 2; *Pro.* 1.

1844 Charles Brooke, M.A., F.R.S., Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; 16, Fitzroy square. C. 1855.

1848 William Philpot Brookes, M.D.

1854 *Henry Brown, Surgeon to H.M. the Queen, and the Royal Household; Windsor.

1857 *Robert Brown, Surgeon to the Carlisle Dispensary; 4, Devonshire street, Carlisle.

1860 Charles Edouard Brown-Séquard, M.D., F.R.S., 25, Cavendish square.

1851 Alexander Browne, M.D., Twynholm, Kirkcudbright.

1860 Thomas Bryant, Assistant-Surgeon to, and Demonstrator of Operative Surgery at, Guy's Hospital; 2, Finsbury square. *Trans.* 3; *Pro.* 1.

1855 Walter John Bryant, L.R.C.P. Edinb., 7, Bathurst street, Hyde park gardens.

1823 B. Bartlet Buchanan, M.D.

1839 George Budd, M.D., F.R.S., Consulting Physician to the Seamen's Hospital Ship 'Dreadnought;' 20, Dover street, Piccadilly. C. 1846-7. V.P. 1857. *Trans.* 5.

1839 Thomas Henry Burgess, M.D., Portsmouth.

1853 Patrick Burke, 6, York place, Portman square.

Elected

1833 †George Burrows, M.D., F.R.S., Physician to St. Bartholomew's Hospital; 18, Cavendish square. C. 1839-40, 1858-9. T. 1845-7. V.P. 1849-50. *Trans.* 2.

1820 Samuel Burrows.

1837 George Busk, F.R.S., F.L.S., Examiner in Comparative Anatomy at the University of London; Surgeon to the Seamen's Hospital Ship 'Dreadnought;' 15, Harley street, Cavendish square. C. 1847-8. V.P. 1855. *Trans.* 4.

1818 John Butter, M.D., F.R.S., F.L.S., Physician Extraordinary to the Plymouth Royal Eye Infirmary; Windsor villas, Plymouth.

1851 *William Cadge, Surgeon to the Norfolk and Norwich Hospital: All Saints, Norwich. *Trans.* 1.

1851 Thomas Callaway, Algiers.

1861 George William Callender, Assistant-Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital; 47, Queen Anne street, Cavendish square.

1852 *George Canney, M.D., Bishop-Auckland, Darlington, Durham.

1847 John Burford Carlill, M.D., Surgeon-Accoucheur to the Newman street Lying-in Institution; 57, Berners street.

1853 Robert Brudenell Carter, Surgeon to the Nottingham Eye Dispensary; Nottingham.

1820 †Samuel Cartwright, F.R.S., F.L.S., Nizell's House, near Tunbridge, Kent.

1845 Samuel Cartwright, jun., Professor of Dental Surgery at King's College, London; Surgeon-Dentist to King's College Hospital; 32, Old Burlington street. C. 1860-1.

1839 William Cathrow, 42, Weymouth street, Portland place. C. 1860-1.

1845 William Oliver Chalk, Surgeon to the St. Marylebone Eye and Ear Institution; 3, Nottingham terrace, York gate, Regent's park.

1844 Thomas King Chambers, M.D., Hon. Physician to H.R.H. the Prince of Wales; Physician to, and Lecturer on Medicine at, St. Mary's Hospital; Physician to the Lock Hospital; 22B, Brook street, Grosvenor square. *Trans.* 1. C. 1861.

Elected

1859 Frank Chance, M.D., 51, Wimpole street, Cavendish square.

1849 Frederick Chapman, Richmond green, Surrey.

1837 Henry Thomas Chapman, 16, Lower Seymour street, Portman square. C. 1858.

1852 George Borlase Childs, Surgeon-in-Chief to the City Police Force, and Surgeon to the Metropolitan Free Hospital; 11, Finsbury place South.

1842 William Dingle Chowne, M.D., Physician to, and Lecturer on Medicine and Midwifery at, the Charing Cross Hospital; Corresponding Fellow of the Royal Academy of Surgery of Madrid; 8, Connaught place West, Hyde park. C. 1853-4.

1860 Andrew Clark, M.D., Assistant Physician to the London Hospital; 23, Montague place, Russell square.

1839 Frederick le Gros Clark, Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital; Surgeon to the Magdalen Hospital; Consulting Surgeon to the Western General Dispensary, and to the London Female Penitentiary, Pentonville; 14, St. Thomas's street, Southwark, and Lee, Kent. S. 1847-9. V.P., 1855-6. *Trans.* 3.

1862 Charles Hall Clarke, M.D., Stonyhurst College, near Blackburn, Lancashire.

1848 John Clarke, M.D., Physician to the British Lying-in Hospital, and Physician to the General Lying-in Hospital; 42, Hertford street, May fair.

1861 *William James Clarke, Surgeon to the Huddersfield Infirmary; John William street, Huddersfield, Yorkshire.

1850 Josiah Clarkson, New Hall street, Birmingham. *Trans.* 1.

1842 Oscar Moore Passey Clayton, 87, Harley street.

1853 Joseph Thomas Clover, 3, Cavendish place, Cavendish square.

1857 Charles Coates, F.R.C.P. Edinb., Physician to the Bath United General Hospital; 10, Circus, Bath.

1851 Edward Cock, Senior Surgeon to, and Lecturer on Clinical Surgery at, Guy's Hospital; Consulting Surgeon to the Asylum for Deaf and Dumb; 11, St. Thomas's street east; Southwark. C. 1857. *Trans.* 3.

Elected

1850 Daniel Whitaker Cohen, M.D.

1835 *William Colborne, Chippenham, Wiltshire.

1818 Robert Cole, F.L.S., Holybourne, Hampshire.

1855 Frederick Collins, M.D., Medical Officer of Health for Wanstead; Wanstead, Essex.

1828 John Conolly, M.D., D.C.L., Consulting Physician to the Middlesex County Lunatic Asylum, Hanwell.

1840 *William Robert Cooke, Burford, Oxfordshire.

1819 George Cooper, Brentford, Middlesex.

1841 George Lewis Cooper, one of the Surgeons to the National Vaccine Institution, and Teacher of Vaccination to the Medical School of University College; Surgeon to the Bloomsbury Dispensary; 7, Woburn place, Russell square. C. 1860-1.

1843 William White Cooper, Surgeon-Oculist in Ordinary to H.M. the Queen; and Hon. Consulting Ophthalmic Surgeon to St. Mary's Hospital; 19, Berkeley square. C. 1858-9.

1841 Holmes Coote, Senior-Assistant-Surgeon to, and Lecturer on Surgery at, St. Bartholomew's Hospital, and Assistant-Surgeon to the Royal Orthopædic Hospital; 13, Queen Anne street, Cavendish square. S. 1853-4. *Trans.* 1.

1835 George Ford Copeland, Cheltenham.

1822 †James Copland, M.D., F.R.S., Consulting Physician to the Royal Infirmary for Children, and to the Great Northern Hospital, King's Cross; Hon. Fellow of the Royal Academy of Sciences of Sweden, &c.; 5, Old Burlington street. C. 1831. V.P. 1838-9. P. 1853-4.

1860 *Thomas Charles Steuart Corry, M.D., Surgeon to the Belfast General Dispensary; 1, Victoria street, Belfast.

1839 *Charles Cæsar Corsellis, M.D., F.L.S., Benson, Oxon.

1853 William Gillett Cory, M.D.

1847 Richard Payne Cotton, M.D, Physician to the Hospital for Consumption and Diseases of the Chest; 46, Clarges street, Piccadilly. C. 1863.

Elected

1828 †William Coulson, Hon. Consulting Surgeon to St. Mary's Hospital, and to the German Hospital; 1, Chester terrace, Regent's park. C. 1831. L. 1832-7. V.P. 1851-2. *Trans.* 1.

1860 †John Couper, Assistant-Surgeon to, and Lecturer on Physiology at, the London Hospital; 33, Finsbury Circus.

1862 George Cowell, Surgeon to the St. George's and St. James's Dispensary; 4, St. George's square, Pimlico.

1841 Mervyn Archdall Nott Crawford, M.D., Wiesbaden, C. 1853-4.

1847 George Critchett, Surgeon to the Royal London Ophthalmic Hospital, Moorfields; 75, Harley street, Cavendish square. *Trans.* 1.

1862 Samuel Crompton, Manchester.

1837 John Farrar Crookes, Harewell, near Faversham, Kent.

1860 Richard Cross, M.D., Physician to the Royal Northern Sea-Bathing Infirmary; Queen street, Scarborough.

1849 *William Edward Crowfoot, Beccles, Suffolk.

1851 James Cameron Cumming, M.D., 1, Cadogan place, Sloane street.

1846 Henry Curling, Surgeon to the Margate Royal Sea-Bathing Infirmary, and the Ramsgate Seamen's Infirmary; Ramsgate, Kent.

1837 Thomas Blizard Curling, F.R.S., Surgeon to the London Hospital; Examiner in Surgery at the University of London; 39, Grosvenor street. S. 1845-6. C. 1850. T. 1854-7. V.P. 1859. *Trans.* 13; *Pro.* 1.

1847 John Edmund Currey, M.D., Lismore, County Waterford.

1822 Christopher John Cusack, Chateau d'Eu, France.

1852 Thomas Cutler, M.D., Acting Physician at the Spa Waters; Spa, Belgium.

1836 *James Stock Daniel, Ramsgate, Kent.

1848 Henry Daubeny.

1846 Frederick Davies, M.D., Surgeon to the Northern Dispensary; 19, Upper Gower street, Bedford square.

1847 John Davies, M.D., Physician Extraordinary to the Hertford General Infirmary, and Visiting Physician to the Hadham Palace Lunatic Asylum, Hertford.

Elected

1853 Robert Coker Nash Davies, Rye, Sussex.

1852 William Davies, M.D., 10, Gay street, Bath.

1852 John Hall Davis, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital; Physician to the Royal Maternity Charity; and Consulting Physician-Accoucheur to the St. Pancras Infirmary; 11, Harley street, Cavendish square.

1818 James Dawson, Wray Castle, Windermere.

1847 George Edward Day, M.D., F.R.S., late Chandos Professor of Anatomy, and Examiner in Medicine in the University of St. Andrew's; St. Mary Church, Torquay.

1858 Teofilo Delima, M.D., Caracas, Venezuela, South America.

1846 *Samuel Best Denton, M.D., Ivy Lodge, Hornsea, Hull.

1859 William Howship Dickinson, M.D., Curator of the Pathological Museum at St. George's Hospital; Assistant-Physician to the Hospital for Sick Children; 11, Chesterfield street, May fair. *Trans.* 5.

1844 Robert Dickson, M.D., F.L.S., Physician to the Scottish Hospital; 16, Hertford street, May fair. C. 1860.

1839 †James Dixon, *Treasurer*, Surgeon to the Royal London Ophthalmic Hospital, Moorfields; and Consulting Ophthalmic Surgeon to the Asylum for Idiots; 2, Portman square. L. 1849-55. V.P. 1857-8. T. 1863. *Trans.* 4.

1862 Horace B. Dobell, M.D., Physician to the Royal Infirmary for Diseases of the Chest, City road; 29, Duncan terrace, City road. *Trans.* 1.

1845 John Dodd.

1857 Archibald Douglas, M.D., 8, Clifton place, Sussex square, Hyde park.

1863 John Langdon Haydon Down, M.D., Resident Physician, Earlswood Asylum for Idiots; Earlswood, Redhill.

1853 Robert Druitt, M.R.C.P., Medical Officer of Health for St. George's, Hanover square; 37, Hertford street, May fair. *Trans.* 2.

1846 John Drummond, Inspector General of Fleets and Hospitals; Dover. *Trans.* 1.

1845 George Duff, M.D., High street, Elgin.

Elected

1845 Edward Willson Duffin, 18, Devonshire street, Portland place. *Trans.* 1.

1833 Robert Dunn, 31, Norfolk street, Strand. C. 1845-6. *Trans.* 2.

1861 Claudius Francis Du Pasquier, Surgeon-Apothecary in Ordinary to H.M. the Queen; and to the Household of H.R.H. the Prince of Wales; 62, Pall Mall.

1843 Christopher Mercer Durrant, M.D., Physician to the East Suffolk and Ipswich Hospital; Ipswich, Suffolk.

1839 Henry Sumner Dyer, M.D., 37, Bryanston sq. C. 1854-5.

1836 James William Earle, late of Norwich.

1824 George Edwards.

1823 Charles Chandler Egerton, Kendall Lodge, Epping.

1861 *Robert Elliot, M.D., 18, Lowther street, Carlisle.

1848 George Viner Ellis, Examiner in Anatomy at the University of London; Professor of Anatomy in University College, London; University College, Gower street. C. 1863. *Trans.* 2.

1854 *James Ellison, M.D., Surgeon in Ordinary to the Royal Household, Windsor; 14, High street, Windsor.

1835 William England, M.D., Ipswich, Suffolk.

1842 John Erichsen, Professor of Surgery in University College, London, and Surgeon to University College Hospital; Examiner in Surgery to the Royal College of Physicians; 6, Cavendish place, Cavendish square. C. 1855-6. *Trans.* 2.

1836 George Fabian Evans, M.D., Physician to the General Hospital, Birmingham.

1815 *Griffith Francis Dorsett Evans, M.D. C. 1838.

1845 William Julian Evans, M.D., Pinner, Middlesex.

1858 Randle Wilbraham Falconer, M.D., Physician to the Bath United Hospital; 22, Bennett street, Bath.

1862 Robert Farquharson, M.D., Coldstream Guards' Hospital, Vincent square, Westminster.

1844 Arthur Farre, M.D., F.R.S., Physician-Accoucheur to H.R.H. the Princess Louis of Hesse; 12, Hertford street, May fair. C. 1857.

Elected

1831 †Robert Ferguson, M.D., Physician Extraordinary to H.M. the Queen, and Consulting Physician to King's College Hospital; 125, Park street, Grosvenor square. C. 1839. V.P. 1847.

1841 William Fergusson, F.R.S., *Vice-President*, Surgeon Extraordinary to H.M. the Queen; Professor of Surgery in King's College, London, and Surgeon to King's College Hospital; Professor of Anatomy and Surgery at the Royal College of Surgeons; 16, George street, Hanover square. C. 1849-50. V.P. 1853. *Trans.* 4.

1852 *Alfred George Field, Surgeon to St. Mary's Hospital, Brighton; 28, Old Steine, Brighton.

1849 George Tupman Fincham, M.D., Physician to, and Lecturer on Medical Jurisprudence at, the Westminster Hospital; 2, Eccleston terrace south, Eccleston square.

1836 Sir John William Fisher, Surgeon-in-Chief to the Metropolitan Police Force; 5, Grosvenor gate. C. 1843-4.

1860 Thomas George Fitzgerald, Staff-Surgeon; 6, Whitehall yard.

1842 Thomas Bell Elcock Fletcher, M.D., Physician to the Birmingham General Hospital; Waterloo street, Birmingham. *Trans.* 1.

1859 William Henry Flower, Conservator of the Museum at the Royal College of Surgeons of England. *Trans.* 1.

1848 John Gregory Forbes, Surgeon to the Metropolitan Convalescent Institution; 9, Devonport street, Hyde park. *Trans.* 2.

1852 †John Cooper Forster, Assistant-Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Surgeon to the Royal Infirmary for Children, &c.; 10, St. Thomas's street, Southwark. *Pro.* 1.

1859 Edward Long Fox, M.B., Physician to the Bristol Royal Infirmary; 10, Berkeley square, Bristol.

1858 *Wilson Fox, M.D., Professor of Pathological Anatomy at University College, London, and Assistant-Physician to University College Hospital; 22B, Cavendish square. *Trans.* 1.

1841 John Christopher Augustus Franz, M.D.

Elected

1843 Patrick Fraser, M.D., Physician to the London Hospital, and to the London Dispensary ; 63, Grosvenor street.

1836 †John George French, Surgeon to the St. James's Infirmary; 41, Great Marlborough street. C. 1852-3.

1849 Robert Temple Frere, M.A., F.R.C.P., 34, Upper Harley street.

1846 Henry William Fuller, M.D., Physician to, and Lecturer on Medical Jurisprudence at, St. George's Hospital; 13, Manchester square. C. 1862. *Trans.* 2.

1815 *George Frederick Furnivall, Medical Attendant of Great Foster House Asylum for Lunatics; Egham, Surrey.

1860 Robert Cameron Galton, M.D., 48, Harley street.

1854 Alfred Baring Garrod, M.D., F.R.S., Examiner in Materia Medica at the University of London; Professor of Materia Medica in King's College, London, and Physician to King's College Hospital; 84, Harley street, Cavendish square. *Trans.* 8.

1857 George Green Gascoyen, Surgeon to the Lock Hospital; Assistant-Surgeon to, and Lecturer on Descriptive and Surgical Anatomy at, St. Mary's Hospital; 48, Queen Anne street, Cavendish square. *Trans.* 1.

1851 George Gaskoin, 3, Westbourne park.

1819 Henry Gaulter.

1848 John Gay, Senior Surgeon to the Great Northern Hospital, and Consulting Surgeon to the Asylum for Idiots; 10, Finsbury place south.

1821 *Richard Francis George, late Senior Surgeon to the Bath General Hospital; 20, Marlborough Buildings, Bath.

1858 Benjamin Godfrey, M.D., Carlton House, Enfield, Middlesex.

1851 Stephen Jennings Goodfellow, M.D., Physician to, and Lecturer on Medicine at, the Middlesex Hospital; 5, Savile row, Burlington gardens. *Trans.* 2.

1818 James Alexander Gordon, M.D., C.B., F.R.S., Pixholme, near Dorking, Surrey. C. 1828. V.P. 1829. *Trans.* 1.

1862 John G. Goulstone, M.D., Bellevue, Shrewsbury.

Elected

1851 Peter Yeames Gowlland, Surgeon to St. Mark's Hospital; 34, Finsbury square.

1844 John Grantham, Crayford, Kent.

1846 George Thompson Gream, M.D., 2, Upper Brook street, Grosvenor square. C. 1863.

1816 Joseph Henry Green, D.C.L., F.R.S., President of the Medical Council; Consulting Surgeon to St. Thomas's Hospital; Hadley, Middlesex. C. 1820. V.P. 1830. *Trans.* 1.

1843 Robert Greenhalgh, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital, and Physician-Accoucheur to the Samaritan Free Hospital for Women and Children; 76, Grosvenor street.

1860 Edward Headlam Greenhow, M.D., Assistant-Physician to, and Lecturer on Public Health and on Medical Jurisprudence at, the Middlesex Hospital, and Consulting Physician to the Western General Dispensary; 77, Upper Berkeley street, Portman square. *Trans.* 1.

1814 John Grove, M.D., Salisbury.

1852 John Grove, West Hill, Wandsworth, Surrey.

1860 Henri Gueneau de Mussy, M.D., 4, Cavendish place, Cavendish square.

1849 William Withey Gull, M.D., Physician to, and Lecturer on Medicine at, Guy's Hospital; Member of the Senate of the University of London; 26, Brook street, Grosvenor square. *Trans.* 2.

1837 James Manby Gully, M.D.; Great Malvern, Worcestershire.

1859 Theophilus Miller Gunn; 40, York place, Portman square.

1854 Samuel Osborne Habershon, M.D., Assistant-Physician to, and Lecturer on Materia Medica and Therapeutics at, Guy's Hospital; 22, Wimpole street, Cavendish square. *Trans.* 1.

1849 Hammett Hailey, Newport Pagnell, Bucks.

1845 Sir John Hall, M.D., K.C.B., Inspector-General of Hospitals.

Elected

1848 Alexander Halley, M.D., F.G.S., 7, Harley street, Cavendish square.

1819 †Thomas Hammerton, 112, Piccadilly. C. 1829-30.

1838 Henry Hancock, Surgeon to, and Lecturer on Surgery at, the Charing Cross Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital; 37, Harley street, Cavendish square. C. 1851.

1849 *Richard James Hansard, late Surgeon to the Radcliffe Infirmary, Oxford.

1848 *George Harcourt, M.D., Chertsey, Surrey.

1836 John Fosse Harding, Mount Sandford, Southborough, Tunbridge Wells. C. 1858-9.

1856 Charles John Hare, M.D., Professor of Clinical Medicine at University College, London; and Physician to University College Hospital; 41, Brook street, Grosvenor square.

1857 George Harley, M.D., F.C.S., Professor of Medical Jurisprudence in University College, London; and Assistant-Physician to University College Hospital; 77, Harley street, Cavendish square.

1859 Francis Harris, M.D., Assistant-Physician to, and Lecturer on Botany at, St. Bartholomew's Hospital; Assistant-Physician to the Hospital for Sick Children; 24, Cavendish square.

1846 John Harrison, 2, the Court yard, Albany.

1843 Thomas Sunderland Harrison, M.D., F.L.S., Innox Hill House, Frome, Somersetshire.

1863 Edward Robinson Harvey, M.D. Oxford; 34, Clarges street, Piccadilly.

1841 William Harvey, Surgeon to the Royal Dispensary for Diseases of the Ear, and to the Freemasons' Female Charity, and Aural Surgeon to the Great Northern Hospital; 2, Soho square. C. 1854.

1855 Alfred Haviland, Surgeon to the Bridgewater Infirmary; Bridgewater, Somerset.

1828 †Cæsar Henry Hawkins, F.R.S., Sergeant-Surgeon to H.M. the Queen, and Consulting Surgeon to St. George's Hospital; 26, Grosvenor street. C. 1830-1, 1860. V.P. 1838-9. T. 1841-4. P. 1855-6. *Trans.* 12.

Elected

1838 Charles Hawkins, Inspector of Anatomy; Consulting Surgeon to Queen Charlotte's Hospital; 22, Savile row, Burlington gardens. C. 1846-7. S. 1850. V.P. 1858. T. 1861-2. *Trans.* 2.

1848 Thomas Hawksley, M.D., Physician to the Margaret street Dispensary for Consumption and Diseases of the Chest; 26, George street, Hanover square.

1860 Henry Howard Hayward, Assistant-Dental Surgeon to the Dental Hospital of London; Dental Surgeon to the Hospital for Consumption, Brompton; 56, Queen Anne street, Cavendish square.

1861 William Henry Hayward, Church House, Oldbury, near Birmingham.

1820 Thomas Emerson Headlam, M.D., Consulting Physician to the Newcastle Infirmary, Newcastle-upon-Tyne.

1848 *James Newton Heale, M.D., Physician to the Winchester County Hospital; Winchester, Hants.

1850 George Heaton, M.D., Boston, U.S.

1829 †Thomas Heberden, M.D., 43, Park street, Grosvenor square.

1844 John Hennen, M.D. L. 1848-50.

1849 Amos Henriques, M.D., Hon. Physician to the Spanish Embassy; 67, Upper Berkeley street, Portman square.

1821 Vincent Herberski, M.D., Professor of Medicine in the University of Wilna.

1843 Prescott Gardner Hewett, Surgeon to St. George's Hospital; 1, Chesterfield street, May fair. C. 1859. *Trans.* 7.

1855 Graily Hewitt, M.D., Physician to the British Lying-in Hospital; Lecturer on Midwifery and the Diseases of Women and Children at St. Mary's Hospital; 36, Berkeley square.

1853 Thomas Hewlett, Surgeon to Harrow School; Harrow, Middlesex. *Trans.* 1.

1841 *Nathaniel Highmore, Sherborne, Dorsetshire.

1862 Matthew Berkeley Hill, M.B. Lond., 14, Weymouth street, Portland place.

Elected

1854 Thomas Hillier, M.D., Physician to the Hospital for Sick Children; Medical Officer to the Skin Department of University College Hospital, and Medical Officer of Health for St. Pancras; 21, Upper Gower street.

1842 William Augustus Hillman, Senior Assistant-Surgeon to the Westminster Hospital; 1, Argyll street, Regent street. C. 1858-9.

1841 †John Hilton, F.R.S., *Vice-President*, Surgeon to, and Lecturer on Surgery at, Guy's Hospital; Consulting Surgeon to the Royal General Dispensary, St. Pancras; Examiner in Surgery at the University of London; 10, New Broad street, City. C. 1851. V.P. 1863. *Trans.* 3.

1859 Francis Hird, Assistant-Surgeon to, and Lecturer at, the Charing Cross Hospital; 17, Clifford street, Bond street.

1840 Thomas Hodgkin, M.D., *Vice-President*, Consulting Physician to the Hospital for Diseases of the Skin, and Member of the Senate of the University of London; 35, Bedford square. C. 1842-3. V.P. 1862-3. *Trans.* 6.

1813 Joseph Hodgson, F.R.S., 60, Westbourne terrace, Hyde park gardens. C. 1817. P. 1851-2. *Trans.* 1.

1861 *William Carter Hoffmeister, M.D., Surgeon to H.M. the Queen in the Isle of Wight; Cowes, Isle of Wight.

1843 Luther Holden, Assistant-Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital; Surgeon to the Metropolitan Dispensary; 54, Gower street, Bedford square. C. 1859.

1814 †Sir Henry Holland, Bart., M.D., D.C.L., LL.D., F.R.S., Physician in Ordinary to H.M. the Queen; 25, Brook street, Grosvenor square. C. 1817, 1833-4. V.P. 1826, 1840. *Trans.* 1.

1861 William Henry Holman, M.B. Lond.; 68, Adelaide road south, Hampstead.

1856 Timothy Holmes, Assistant-Surgeon to, and Lecturer on Anatomy at, St. George's Hospital, and Surgeon to the Hospital for Sick Children; 22, Queen street, May fair. *Trans.* 2.

Elected

1816 Barnard Wight Holt, Senior Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster; 14, Savile row, Burlington gardens. C. 1862-3.

1846 Carsten Holthouse, Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; Surgeon to the South London Ophthalmic Hospital; 2, Storey's gate, St. James's park. C. 1863.

1853 William Charles Hood, M.D., F.L.S., Visiting Physician in Lunacy to the Court of Chancery; 45, Lincoln's Inn Fields. *Trans.* 1.

1828 *Edward Howell, M.D., Senior Consulting Physician to the Swansea Infirmary; 2, South Hill place, Swansea, Glamorganshire.

1857 John Whitaker Hulke, Assistant-Surgeon to the Middlesex Hospital, and Assistant-Surgeon to the Royal London Ophthalmic Hospital, Moorfields; 10, Old Burlington street. *Trans.* 2.

1857 Edward Charles Hulme, Surgeon to the Great Northern Hospital, Surgeon to the Central London Ophthalmic Hospital; 19, Gower street, Bedford square. *Trans.* 1.

1844 Edwin Humby, 83, Hamilton terrace, St. John's wood.

1855 George Murray Humphry, M.D., F.R.S., Surgeon to Addenbrooke's Hospital, and Lecturer on Anatomy in the Cambridge University Medical School; Cambridge. *Trans.* 4.

1849 Edward Law Hussey, Surgeon to the Radcliffe Infirmary; St. Aldate's, Oxford. *Trans.* 1.

1856 Jonathan Hutchinson, Surgeon to, and Lecturer on Surgery at, the London Hospital; Assistant-Surgeon to the Royal London Ophthalmic Hospital, Moorfields; Surgeon to the Metropolitan Free Hospital; 4, Finsbury circus. *Pro.* 2.

1820 William Hutchinson, M.D.

1840 Charles Hutton, M.D., Physician to the General Lying-in Hospital, and to the Royal Infirmary for Children and Women; 26, Lowndes street, Belgrave square. C. 1858-9.

Elected

1847 William Edmund Image, Senior Surgeon to the Suffolk General Hospital; Bury St. Edmund's, Suffolk. *Trans.* 1.

1856 Cornelius Inglis, M.D.

1826 William Ingram, Midhurst, Sussex.

1845 *Henry Jackson, Senior Surgeon to the Sheffield General Infirmary; St. James's row, Sheffield, Yorkshire.

1841 Paul Jackson, 24, Wimpole street, Cavendish square. C. 1862.

1841 Maximilien Morris Jacobovics, M.D., Vienna.

1825 John B. James, M.D.

1847 *William Withall James, Surgeon to the Devon and Exeter Hospital; Exeter, Devonshire.

1844 Samuel John Jeaffreson, M.D., Physician to the Warneford Hospital, and Warwick Dispensary; Leamington, Warwickshire.

1839 Julius Jeffreys, F.R.S., Drymona, Belvidere road south, Upper Norwood, Surrey.

1840 *George Samuel Jenks, M.D., 18, Circus, Bath.

1851 William Jenner, M.D., Physician in Ordinary to H.M. the Queen, and to H.R.H. the Prince of Wales; Physician to University College Hospital, and Professor of the Principles and Practice of Medicine at University College; Physician to the Hospital for Sick Children; 8, Harley street, Cavendish square. *Trans.* 3.

1848 Athol Archibald Wood Johnson, 20, Regency square, Brighton. *Trans.* 1.

1851 Edmund Charles Johnson, M.D., Corresponding Member of the Imperial Society of Florence; C., No. 3, Albany, Piccadilly.

1847 George Johnson, M.D., Professor of the Principles and Practice of Medicine in King's College, London, and Physician to King's College Hospital; 11, Savile row, Burlington gardens. C. 1862-3. *Trans.* 5.

1862 Charles Handfield Jones, M.B., F.R.S., Physician to St. Mary's Hospital; 49, Green street, Grosvenor square.

1844 †Henry Bence Jones, M.A., M.D., F.R.S.; 31, Brook street, Grosvenor square. C. 1855-6. *Trans.* 11.

Elected

1835 Henry Derviche Jones, 12, Norfolk crescent, Hyde park. C. 1854-5.

1837 Thomas William Jones, M.D., 19, Finsbury pavement, and Green street, Ponders End. C. 1858.

1859 William Price Jones, M.D., Surbiton, Kingston.

1829 *George Charles Julius, Richmond, Surrey.

1816 *George Hermann Kauffmann, M.D., Hanover.

1848 *Daniel Burton Kendell, M.D., Kettlethorpe Hall, Wakefield, Yorkshire.

1847 Alfred Keyser, 21, Norfolk crescent, Oxford square.

1857 Henry Walter Kiallmark, late Staff Surgeon, 2nd class, attached to the Ottoman Army; 46, Prince's square, Westbourne grove.

1839 *David King, M.D., Medical Officer of Health for Eltham; Eltham, Kent.

1851 John Abernethy Kingdon, Surgeon to the City of London Truss Society, and to the City Dispensary; 2, New Bank buildings, City.

1858 William Senhouse Kirkes, M.D., Assistant-Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital; 2, Lower Seymour street, Portman square. *Trans.* 1.

1855 James Robert Lane, Surgeon to, and Lecturer on Operative Surgery at, St. Mary's Hospital, and Surgeon to the Lock and St. Mark's Hospitals; 1, Grosvenor place.

1840 Samuel Armstrong Lane, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital, and Consulting Surgeon to the Lock Hospital; 1, Grosvenor place. C. 1849-50.

1841 *Charles Lashmar, M.D., 83, North End, Croydon, Surrey.

1862 Peter Wallwork Latham, M.A., M.B., Physician to Addenbrooke's Hospital, Cambridge; Examiner for Medical Degrees in Cambridge University; 15, Sidney street, Cambridge.

1816 G. E. Lawrence.

Elected

1809 †William Lawrence, F.R.S., Serjeant-Surgeon to H.M. the Queen; Surgeon to, and Lecturer on Surgery at, St. Bartholomew's Hospital, and Surgeon to Bridewell and Bethlem Hospital; Foreign Associate of the Imperial Academy of Medicine of Paris; 18, Whitehall place. S. 1813-7. V.P. 1818-9. T. 1821-6. P. 1831-2. C. 1820, 1833-4, 1842-3. *Trans.* 18.

1840 Thomas Laycock, M.D., F.R.S.E., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Psychology and Mental Diseases in the University of Edinburgh, and Physician to the Edinburgh Royal Infirmary; 4, Rutland street, Edinburgh.

1843 *Jesse Leach, Moss Hall, Heywood, near Bury, Lancashire.

1822 John Joseph Ledsam, M.D., 17, Esplanade, Scarborough, Yorkshire.

1823 †Henry Lee, M.D., Weather Oak, Alvechurch, near Bromsgrove, Worcestershire. C. 1837. S. 1839-40.

1843 Henry Lee, *Librarian*, Surgeon to, and Lecturer on Pathology at, St. George's Hospital; 9, Savile row, Burlington gardens. C. 1856-7. L. 1863. *Trans.* 7. *Pro.* 1.

1822 †Robert Lee, M.D., F.R.S., Lecturer on Midwifery at St. George's Hospital; Corresponding Member of the Imperial Academy of Medicine, Paris; 4, Savile row, Burlington gardens. C. 1829, 1834. S. 1830-3. V.P. 1835. *Trans.* 26.

1836 Frederick Leighton, M.D., Frankfort-on-the-Maine.

1854 Hananel de Leon, M.D., 15, Holland villas road, North Kensington.

1856 David Lewis, M.D., Physician to the Royal Society of Ancient Britons' Schools.

1847 Sir John Liddell, M.D., C.B., F.R.S., Hon. Physician to H.M. the Queen, Director-General of the Medical Department of the Navy; Admiralty, Somerset House, and 72, Chester square, Belgravia.

1806 John Lind, M.D.

1845 William John Little, M.D., 34, Brook street, Grosvenor square.

1819 Robert Lloyd, M.D.

Elected

1820 J. G. Locher, M.C.D., Town Physician of Zurich. *Trans.* 2.

1824 †Sir Charles Locock, Bart., M.D., First Physician-Accoucheur to H.M. the Queen; Member of the Senate of the University of London; 26, Hertford street, Mayfair. C. 1826. V.P. 1841. P. 1857-8. *Trans.* 1.

1852 Charles Lodge, M.D., "United States Army."

1846 Henry Thomas Lomax, Surgeon to the County Police; St. Mary's grove, Stafford.

1860 Thomas Longmore, Deputy Inspector-General and Professor of Clinical and Military Surgery; New Army Medical School, Royal Victoria Hospital, Netley, Southampton. *Trans.* 1.

1836 Joseph S. Löwenfeld, M.D., Berbice.

1852 James Luke, F.R.S., Consulting Surgeon to the London Hospital, and Surgeon to St. Luke's Hospital for Lunatics; 37, Broad street buildings, City. C. 1858. *Trans.* 4.

1857 Felix William Lyon, M.D., Lyndhurst, Hants.

1862 *Robert M'Donnell, M.D., Examiner in Anatomy and Physiology, Queen's University in Ireland; 11, Lower Pembroke street, Dublin.

1846 William M'Ewen, M.D., Surgeon to Chester Castle; 27, Nicholas street, Chester.

1823 †George Macilwain, Consulting Surgeon to the Finsbury Dispensary and the St. Ann's Society's Schools; 3, the Court yard, Albany. C. 1829-30. V.P. 1848. *Trans.* 1.

1822 Richard Mackintosh, M.D.

1859 *John M'Intyre, M.D., Odiham, Hants.

1848 Frederick William Mackenzie, M.D., Physician to Queen Charlotte's Lying-in Hospital; 11, Chester place, Hyde park square. *Trans.* 2.

1818 William Mackenzie, M.D., Surgeon-Oculist to H.M. the Queen in Scotland, and Surgeon to the Glasgow Eye Infirmary; 49, Bath street, Glasgow. *Trans.* 2.

1854 *Draper Mackinder, M.D., Consulting Surgeon to the Dispensary, Gainsborough, Lincolnshire.

Elected

1844 Daniel Maclachlan, M.D., late Physician to the Royal Hospital, Chelsea; Deputy Inspector-General of Hospitals. C. 1860-1. *Trans.* 1.

1860 John Maclean, M.D., 24, Portman street, Portman square.

1851 Samuel Maclean, 68, Wimpole street, Cavendish square.

1849 Duncan Maclachlan Maclure, 16, Harley street, Cavendish square.

1842 John Macnaught, M.D., Bedford street, Liverpool.

1837 Andrew Melville M'Whinnie, Assistant-Surgeon to the London Hospital for Diseases of the Skin, Blackfriars; 5, Crescent, New Bridge street, Blackfriars. C. 1851-2. *Trans.* 1.

1855 William Marcet, M.D., F.R.S., Lecturer on Physiological Chemistry at the Westminster Hospital; 1, Torrington street, Torrington square. *Trans.* 1.

1848 William Orlando Markham, M.D., Physician to St. Mary's Hospital; 33, Clarges street, Piccadilly. C. 1862-3. *Trans.* 2.

1838 Thomas Parr Marsh, M.D., Consulting Physician to the Salop Infirmary, Shrewsbury; Coed Cefer, Monmouth.

1851 John Marshall, F.R.S., Surgeon to University College Hospital; Fullerian Professor of Physiology at the Royal Institution of Great Britain; 10, Savile row, Burlington gardens. *Trans.* 2.

1811 Sir James Ranald Martin, C.B., F.R.S., Examining Medical Officer to the Secretary of State for India in Council; 24, Mount street, Grosvenor square. C. 1853. V.P. 1862.

1849 George Bellasis Masfen, Ghazeepore, India.

1853 William Edward Masfen, Surgeon to the Staffordshire General Infirmary; Stafford.

1837 Thomas Mayo, M.D., F.R.S.; The Refuge, Yarmouth, Isle of Wight. S. 1841. C. 1847-8. V.P. 1851-2.

1839 Richard Henry Meade, Senior Surgeon to the Bradford Infirmary; Bradford, Yorkshire. *Trans.* 1.

1837 Samuel William John Merriman, M.D., Consulting Physician-Accoucheur to the Westminster General Dispensary, and Physician-Accoucheur to the Western General Dispensary; 3, Charles street, Westbourne terrace. C. 1851-2. *Trans.* 1.

Elected

1852 James Merryweather, Consulting Surgeon to the National Dental Hospital; 57, Brook street, Grosvenor square.

1847 Edward Meryon, M.D., F.G.S., 14, Clarges street, Piccadilly. L. 1859-60. *Trans.* 1.

1815 Augustus Meyer, M.D., St. Petersburgh.

1840 Richard Middlemore, Consulting Surgeon to the Birmingham Eye Infirmary; Temple row, Birmingham.

1854 Edward Archibald Middleship, late of Richmond, Surrey.

1860 *Herbert Chalmers Miles, Assistant-Surgeon in the Royal Artillery; Montreal, Canada east; and 17, Whitehall place.

1818 *Patrick Miller, M.D., F.R.S.E., Senior Physician to the Devon and Exeter Hospital, and to St. Thomas's Hospital for Lunatics; the Grove, Exeter, Devonshire.

1863 Henry Monro, M.D., Physician to St. Luke's Hospital, 13, Cavendish square.

1844 Nathaniel Montefiore, 36, Hyde park gardens.

1848 Charles Hewitt Moore, Surgeon to, and Lecturer on Anatomy at, the Middlesex Hospital; 102, Piccadilly. L. 1858. S. 1859-62. *Trans.* 5.

1836 George Moore, M.D., Hastings, Sussex.

1861 Charles Morehead, M.D., Hon. Surgeon to H.M. the Queen; Deputy-Inspector General of Hospitals; late Principal of Grant Medical College, Bombay, &c., 2, Westbourne terrace, Hyde park gardens.

1857 John Morgan, 3, Sussex place, Hyde park gardens.

1861 John Edward Morgan, M.B., 33, King street, Manchester.

1851 Frederick John Mouat, M.D., Professor of Medicine in the Medical College of Calcutta, Secretary of the Council of Education in India, and Inspector-General of Gaols, Lower Provinces; Calcutta.

1856 Charles Murchison, M.D., Senior Physician to the London Fever Hospital; Assistant-Physician to, and Lecturer on Pathological Anatomy at, the Middlesex Hospital; 79, Wimpole street, Cavendish square. *Trans.* 2.

1847 Simon Murchison, Bicester, Oxon.

Elected

1863 Arthur B. R. Myers, Coldstream Guards.

1859 George Nayler, 8, George street, Hanover square.

1835 Thomas Andrew Nelson, M.D., 10, Nottingham terrace, York gate, Regent's park.

1843 Edward Newton, 30, Fitzroy square. C. 1863.

1851 James Nichols, M.R.C.P., 13, Savile row, Burlington gardens.

1849 Henry Burford Norman, Portland Lodge, Southsea, Hants.

1845 Henry Norris, Charmouth, Dorset.

1847 *William Edward Charles Nourse, Surgeon to St. Mary's Hospital, Brighton; 11, Marlborough place, Brighton.

1849 Arthur Noverre, 25, South street, Park lane.

1859 *Thomas Nunneley, Senior Surgeon to the Leeds Eye and Ear Infirmary; Leeds. *Trans.* 2.

1847 Thomas O'Connor, March, Cambridgeshire.

1843 William O'Connor, M.D., Physician to the Royal Free Hospital; 30, Upper Montagu street, Montagu square.

1858 John William Ogle, M.D., Assistant-Physician to St. George's Hospital; 13, Upper Brook street, Grosvenor square. *Trans.* 4.

1855 *William Ogle, M.A., M.D., Physician to the Derby Infirmary; 3, Stewart terrace, Derby.

1860 William Ogle, M.D., 37, Clarges street, Piccadilly.

1850 Henry Oldham, M.D., Obstetric Physician to, and Clinical Lecturer on Midwifery at, Guy's Hospital, and Obstetric Physician to the Tower Hamlets Dispensary; 26, Finsbury square. *Trans.* 1.

1846 *Edward Latham Ormerod, M.D., Physician to the Sussex County Hospital; 14, Old Steine, Brighton. *Trans.* 2.

1847 *William Bousfield Page, Surgeon to the Cumberland Infirmary; Carlisle. *Trans.* 2.

1840 James Paget, F.R.S., Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to St. Bartholomew's and Christ's Hospitals, and Member of the Senate of the University of London; 1, Harewood place, Hanover square. C. 1848-9. V.P. 1861. *Trans.* 8.

Elected

1858 *William Paley, M.D., Physician to the Ripon Dispensary; Ripon, Yorkshire.

1861 James Palfrey, M.D., Senior Assistant-Physician to the Metropolitan Free Hospital; Physician to the Surrey Dispensary; 12, Wellington street, Southwark.

1836 Langston Parker, Hon. Surgeon to the Queen's Hospital, Birmingham; Colmore row, Birmingham.

1847 Nicholas Parker, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; 22, Finsbury sq.

1841 John Parkin, M.D., Rome.

1851 James Part, M.D., 7, Camden road villas, Camden town.

1828 †Richard Partridge, F.R.S., *President*, Professor of Anatomy to the Royal Academy of Arts, Surgeon to King's College Hospital, and Professor of Anatomy in King's College, London; 17, New street, Spring gardens. S. 1832-6. C. 1837-8. V.P. 1847-8. C. 1861-2. P. 1863.

1845 Thomas Bevill Peacock, M.D., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital; Physician to the City of London Hospital for Diseases of the Chest, Victoria park; 20, Finsbury circus. S. 1855-6. *Trans.* 2.

1856 Richard King Peirce, 16, Norland place, Notting hill.

1830 Charles P. Pelechin, M.D., St. Petersburgh.

1855 *Oliver Pemberton, Surgeon to the Birmingham General Hospital, and Lecturer on Surgical Pathology at Sydenham College; 18, Temple row, Birmingham. *Trans.* 1.

1844 William Vesalius Pettigrew, M.D., Surgeon to the Female Orphan Asylum, Lambeth; 7, Chester street, Grosvenor place.

1848 Edward Phillips, M.D., F.L.S., Physician to the Coventry and Warwickshire Hospital; Coventry, Warwickshire.

1852 Richard Phillips, 52, Leinster square, Westbourne grove.

1854 Thomas Bacon Phillips, M.D., Physician to the Brighton and Hove Dispensary; 36, Lansdowne place, Brighton.

1846 Francis Richard Philp, M.D., Colby House, Kensington.

1851 *James Hollins Pickford, M.D., M.R.I.A., 1, Cavendish place, Brighton.

Elected

1836 Isaac Pidduck, M.D., Physician to the Bloomsbury Dispensary; 22, Montague street, Russell square. *Pro.* 2.

1852 Henry Pilleau, Deputy Inspector-General of Hospitals.

1841 Henry Alfred Pitman, M.D., *Treasurer*, Physician to, and Lecturer on Medicine at, St. George's Hospital; Consulting Physician to the Royal General Dispensary, St. Pancras; 94, Gloucester place, Portman square. L. 1851-3. C. 1861-2. T. 1863.

1850 Alfred Poland, Surgeon to Guy's Hospital and to the Eye Infirmary attached to the Hospital; 58, Welbeck street, Cavendish square.

1845 George David Pollock, Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to St. George's Hospital; 27, Grosvenor street. C. 1856-7. L. 1859-62. *Trans.* 2.

1843 Charles Pope, M.D., Glastonbury, Somersetshire.

1846 Jephson Potter, M.D., F.L.S., 109, Upper Parliament street, Liverpool.

1842 James Powell, M.B.

1851 Robert Francis Power, M.D., 7, Lower Grosvenor place.

1857 William Overend Priestley, M.D., Professor of Midwifery in King's College, London; and Physician for the Diseases of Women and Children to King's College Hospital; Consulting Physician-Accoucheur to the St. Marylebone Infirmary; 17, Hertford street, May fair.

1839 John Propert, Consulting Surgeon to the Society of Ancient Britons; 6, New Cavendish street, Portland pl.

1845 John Pyle, 56, Oxford terrace, Hyde park. C. 1860.

1830 Jones Quain, M.D., Paris.

1850 Richard Quain, M.D., Physician to the Hospital for Consumption and Diseases of the Chest, and Member of the Senate of the University of London; 56, Harley street, Cavendish square. *Trans.* 1.

1835 †Richard Quain, F.R.S., Surgeon Extraordinary to H.M. the Queen; Professor of Clinical Surgery in University College, London, and Surgeon to University College Hospital; Consulting Surgeon to the Eye Infirmary attached to the Hospital; 32, Cavendish square. C. 1838-9. L. 1846-8. T. 1851-3. V.P. 1856-7. *Trans.* 1. *Pro.* 2.

Elected

1852 Charles Bland Radcliffe, M.D., Physician to, and Lecturer on Materia Medica at, the Westminster Hospital; Physician to the National Hospital for the Paralysed and Epileptic; 4, Henrietta street, Cavendish square.

1857 Henry Ranke, M.D., Munich.

1854 William Henry Ransom, M.D., Physician to the Nottingham General Hospital; Nottingham.

1859 Henry Hunter Raymond, Cirencester, Gloucestershire.

1858 Frederick George Reed, M.D., 46, Hertford street, May fair. *Trans.* 1.

1821 Henry Reeder, M.D.

1857 George Owen Rees, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital; 26, Albemarle street, Piccadilly. *Trans.* 1.

1855 John Russell Reynolds, M.D., Professor of Clinical Medicine at University College, London, and Physician to University College Hospital; 38, Grosvenor street.

1847 Samuel Richards, M.D., 36, Bedford square.

1852 Christopher Thomas Richardson, M.B.

1829 Sir John Richardson, Knt., M.D., LL.D., C.B., F.R.S., Inspector of Hospitals and Fleets; Lancrigg, Grasmere, Westmoreland.

1849 *William Richardson, M.D., 9, Ephraim road, Tunbridge Wells, Kent.

1845 Benjamin Ridge, M.D., 21, Bruton street, Berkeley square.

1843 Joseph Ridge, M.D, 39, Dorset square. C. 1858. *Pro.* 1.

1852 Charles Ridley, Surgeon to the Royal Society for Protection of Life from Fire; 6, Charlotte street, Bedford square.

1852 John Roberts, M.R.C.P., 75, Grosvenor street.

1829 *Archibald Robertson, M.D., F.R.S., 11, West mall, Clifton, Bristol.

1855 Charles Alexander Lockhart Robertson, M.D., Medical Superintendent of the Sussex County Lunatic Asylum; Hayward's Heath, Sussex.

1857 John Charles George Robertson, Assistant Medical Officer, Female Department, Middlesex Lunatic Asylum, Hanwell.

Elected

1862 Charles Robinson, 53, Upper Seymour street, Portman square.

1843 George Robinson, M.D., 26, Welbeck street, Cavendish square. *Trans.* 2.

1843 William Roden, M.D., the Grange, Kidderminster, Worcestershire.

1835 George Hamilton Roe, M.D., Senior Physician to the Hospital for Consumption and Diseases of the Chest; 57, Park street, Grosvenor square. C. 1841-2. *Trans.* 1.

1836 Arnold Rogers, Consulting Surgeon-Dentist to St. Bartholomew's Hospital; 16, Hanover square.

1829 William Sudlow Roots, F.L.S., Surgeon to the Royal Establishment at Hampton Court; Kingston, Surrey.

1850 George Roper, 168, Shoreditch.

1836 Richard Roscoe, M.D.

1855 Thomas Tattersall Roscow, M.D.

1836 *Caleb Burrell Rose, F.G.S., 25, King street, Great Yarmouth, Norfolk. *Trans.* 1.

1857 Henry Cooper Rose, M.D., High street, Hampstead.

1849 Charles Henry Felix Routh, M.D., Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square. *Trans.* 1.

1845 Henry Mortimer Rowdon, M.D., Member of the Court of Examiners of the Society of Apothecaries; 29, Nottingham place, Marylebone road.

1834 Henry Wyldbore Rumsey, Gloucester lodge, Cheltenham.

1845 James Russell, M.D., Physician to the Birmingham General Hospital, and Lecturer on Pathology and Therapeutics at Sydenham College; 91, New Hall street, Birmingham.

1851 Henry Hyde Salter, M.D., F.R.S., Assistant-Physician to, and Lecturer on Physiology and Pathology at, the Charing Cross Hospital; 6, Montague street, Russell square.

1856 Samuel James A. Salter, F.R.S., F.L.S., Surgeon-Dentist to, and Lecturer on Dental Surgery at, Guy's Hospital; 17, New Broad street, City. *Trans.* 2.

1849 Hugh James Sanderson, M.D., Physician to the Hospital for Women; 26, Upper Berkeley street, Portman square.

Elected

1855 John Burdon Sanderson, M.D., Assistant-Physician to the Middlesex Hospital; Medical Officer of Health for Paddington; 9, Gloucester place, Hyde park.

1847 William Henry Octavius Sankey, M.D., Middlesex County Lunatic Asylum, Hanwell.

1845 Edwin Saunders, Surgeon-Dentist to H.M. the Queen, and to H.R.H. the Prince of Wales; 13A, George street, Hanover square.

1834 Ludwig V. Sauvan, M.D., Warsaw.

1859 William Scovell Savory, F.R.S., Assistant-Surgeon to, and Lecturer on General Anatomy and Physiology at, St Bartholomew's Hospital; Examiner in Physiology and Comparative Anatomy at the University of London; 23A, Brook street, Grosvenor square. *Trans.* 2.

1853 Maurice Schulhof, M.D., Physician to the Royal General Dispensary, Bartholomew Close; 14, Brook street, Grosvenor square.

1861 *William Scott, M.D., Physician to the Huddersfield Infirmary; 12, New North road, Huddersfield.

1858 *George Scratchley, M.D., New Orleans, Louisiana, U.S.

1856 Edwin Sercombe, Surgeon-Dentist to St. Mary's Hospital; 49, Brook street, Grosvenor square. *Trans.* 1. *Pro.* 1.

1824 †Edward James Seymour, M.D., F.R.S., Consulting Physician to the Seamen's Hospital Ship 'Dreadnought;' 13, Charles street, Berkeley square. C. 1826, 1831. S. 1827-8. V.P. 1830, 1842. *Trans.* 2.

1840 William Sharp, M.D., F.R.S., Horton House, Rugby. *Trans.* 1.

1837 †William Sharpey, M.D., F.R.S., LL.D., Professor of Anatomy and Physiology in University College, London, and Secretary of the Royal Society; 33, Woburn place, Russell square. C. 1848-9. V.P. 1862.

1836 †Alexander Shaw, Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital; 22A, Cavendish square. C. 1842. S. 1843-4. V.P. 1851-2. T. 1858-60. *Trans.* 4.

1848 *Edward James Shearman, M.D., Rotherham, Yorkshire.

Elected

1859 Septimus William Sibley, Lecturer on Pathological Anatomy at the Middlesex Hospital; 12, New Burlington street. *Trans.* 3.

1849 Francis Sibson, M.D., F.R.S., Physician to St. Mary's Hospital; Examiner in the Practice of Medicine at the University of London; 40, Brook street, Grosvenor square. C. 1863. *Trans.* 1.

1848 Edward Henry Sieveking, M.D., *Secretary*, Physician in Ordinary to H.R.H. the Prince of Wales; Physician to, and Lecturer on Materia Medica at, St. Mary's Hospital; 17, Manchester square. C. 1859-60. S. 1861-3. *Trans.* 2.

1842 John Simon, F.R.S., Surgeon to, and Lecturer on General Pathology at, St. Thomas's Hospital; Medical Officer of the Privy Council; 8, Richmond terrace, and 44, Cumberland street, Bryanston square. C. 1854-55. *Trans.* 1.

1857 James Lewis Siordet, M.B., Mentone.

1827 George Robert Skene, Bedford.

1824 †Frederic Carpenter Skey, F.R.S., Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital; 13, Grosvenor street. C. 1828. L. 1829-31. V.P. 1841-2. P. 1859-60. *Trans.* 1.

1852 Charles Case Smith, Consulting Surgeon to the Suffolk General Hospital; Bury St. Edmund's, Suffolk.

1835 John Gregory Smith, Harewood, Leeds, Yorkshire.

1843 Robert William Smith, M.D., M.R.I.A., Professor of Surgery in the University of Dublin; Surgeon to the Richmond Hospital; 63, Eccles street, Dublin.

1838 Spencer Smith, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital; 9, Queen Anne street, Cavendish square. C. 1854. S. 1855-8. V.P. 1859-60.

1863 Thomas Smith, Demonstrator of Anatomy at St. Bartholomew's Hospital, and Assistant-Surgeon to the Hospital for Sick Children; 7, Montague street, Russell square.

1845 William Smith, Surgeon to the Chesterfield and North Derbyshire Hospital and Dispensary, Chesterfield, Derbyshire. *Trans.* 1.

Elected

1847 William Smith, M.D., Consulting Physician to the Weymouth Infirmary; Weymouth, Dorsetshire.

1850 William Tyler Smith, M.D., Examiner in Midwifery at the University of London; Physician-Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital; 21, Upper Grosvenor street. *Trans.* 2.

1851 John Soden, Surgeon to the Bath United Hospital, and Consulting Surgeon to the Bath Eye Infirmary; 24, Circus, Bath. *Trans.* 2.

1830 †Samuel Solly, F.R.S., Surgeon to St. Thomas's Hospital; Consulting Surgeon to the Royal General Dispensary, Bartholomew Close; 6, Savile row. L. 1838-40. C. 1845-6. V.P. 1849-50. *Trans.* 6.

1844 Frederick R. Spackman, M.D., Harpenden, St. Alban's.

1834 James Spark, Italy.

1851 Robert John Spitta, M.B., Medical Officer to the Clapham General Dispensary; Clapham, Surrey. *Trans.* 1.

1843 *Stephen Spranger, Hursley, Hampshire.

1857 John Stanton, M.D., 9, Montagu square.

1851 James Startin, Surgeon to, and Lecturer on Cutaneous Disorders at, the Hospital for Diseases of the Skin, Blackfriars; 3, Savile row, Burlington gardens.

1854 Henry Stevens, M.D., Lond., 78, Grosvenor street.

1842 Alexander Patrick Stewart, M.D., *Librarian*, Physician to, and Lecturer on Medicine at, the Middlesex Hospital; 74, Grosvenor street. C. 1856-7. L. 1863.

1859 William Edward Stewart, 12, Weymouth st., Portland pl.

1856 Alonzo Henry Stocker, M.D, Resident Medical Superintendent of Grove Hall Lunatic Asylum, Bow.

1843 Robert Reeve Storks, Paris.

1858 †John Fremlyn Streatfeild, Assistant-Surgeon to the Royal London Ophthalmic Hospital, Moorfields, and Assistant-Surgeon to the Eye Infirmary attached to University College Hospital; 15, Upper Brook street, Grosvenor square.

1863 Octavius Sturges, M.B., Physician to the Chelsea, Brompton, and Belgrave Dispensary; 35, Connaught square.

Elected

1839 Alexander John Sutherland, M.D., F.R.S., Consulting Physician to the Royal South London Dispensary; 6, Richmond terrace, Whitehall. C. 1850-1. V.P. 1858-9. *Trans.* 1.

1860 Sigismund Sutro, M.D., Senior Physician to the German Hospital; 37A, Finsbury square.

1855 John Maule Sutton, M.D., Bloomfield, Narberth, Pembrokeshire.

1861 *George Bacon Sweeting, King's Lynn, Norfolk.

1842 James Syme, F.R.S.E., Surgeon in Ordinary to H.M. the Queen in Scotland; Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Edinburgh Royal Infirmary; 2, Rutland street, Edinburgh. *Trans.* 5.

1851 *Frederick Symonds, Surgeon to the Radcliffe Infirmary, and Consulting Surgeon to the Oxford Dispensary; 32, Beaumont street, Oxford.

1844 Richard William Tamplin, Surgeon to the Royal Orthopædic Hospital; 33, Old Burlington street.

1848 Thomas Hawkes Tanner, M.D., F.L.S., 9, Henrietta street, Cavendish square.

1852 Robert Taylor, Surgeon to the Central London Ophthalmic Hospital, and to the Cripple's Home, Hill street; 10, George street, Hanover square.

1845 Thomas Taylor, Lecturer on Chemistry at the Middlesex Hospital Medical School; 4, Vere street, Cavendish square.

1856 Thomas Pridgin Teale, F.R.S., F.L.S., Surgeon to the Leeds General Infirmary; Albion street, Leeds. *Trans.* 2.

1859 Edward Tegart, Junior, 49, Jermyn street, St. James's.

1862 Edmund Symes Thompson, M.D., Assistant-Physician to King's College Hospital; Assistant-Physician to the Hospital for Consumption, Brompton; 3, Upper George street, Portman square.

1857 Henry Thompson, M.D., Physician to, and Lecturer on Materia Medica at, the Middlesex Hospital; 52, Welbeck street, Cavendish square.

Elected

1852 Henry Thompson, Consulting Surgeon to the St. Marylebone Infirmary, and Surgeon to University College Hospital; 35, Wimpole street, Cavendish square. *Trans.* 2.

1862 Reginald Edward Thompson, M.D., Physician to the St. George's and St. James's Dispensary; 4, Upper Belgrave street.

1850 Robert Dundas Thomson, M.D., F.R.S., Physician to the Scottish Hospital, and Medical Officer of Health for St. Marylebone; 41, York terrace, Regent's park. *Trans.* 2.

1836 John Thurnam, M.D., Resident Medical Superintendent of the Wilts County Asylum, Devizes, Wiltshire. *Trans.* 4.

1848 Edward John Tilt, M.D., Consulting Physician to the Farringdon General Dispensary and Lying-in Charity; 60, Grosvenor street.

1828 James Torrie, M.D., Old Bridge of Don, by Aberdeen.

1843 Joseph Toynbee, F.R.S., Aural Surgeon to, and Lecturer on Aural Surgery at, St. Mary's Hospital; Consulting Aural Surgeon to the Asylum for the Deaf and Dumb, and to the St. George's and St. James's Dispensary; 18, Savile row, Burlington gardens. C. 1863. *Trans.* 8. *Pro.* 1.

1850 Samuel John Tracy, Surgeon-Dentist to St. Bartholomew's and Christ's Hospitals; 28, Old Burlington street.

1859 Edwin Thomas Truman, Surgeon-Dentist in Ordinary to Her Majesty's Household; 23, Old Burlington street.

1862 Thomas Harrington Tuke, M.D., Manor house, Chiswick, and 37, Albemarle street.

1855 James Stewart Tulloch, M.D., 1, Pembridge place, Bayswater.

1845 Thomas Turner, F.L.S., Consulting Surgeon to the Manchester Royal Infirmary, and Lecturer on Anatomy and Physiology at the Manchester Royal School of Medicine; 77, Mosley street, Manchester.

1846 Alexander Ure, Surgeon to, and Lecturer on Clinical Surgery at, St. Mary's Hospital, and Consulting Surgeon to the Westminster General Dispensary; 18, Upper Seymour street, Portman square. *Trans.* 1.

1866 Bowyer Vaux, Teignmouth, Devon.

Elected

1828 Benedetto Vulpes, M.D., Physician to the Hospital of Aversa, and to the Hospital of Incurables, Naples.

1854 Edward Waddington, Surgeon to the King's Own Staffordshire Rifles; Wakefield, Yorkshire.

1841 Robert Wade, Senior Surgeon to the Westminster General Dispensary; 68, Dean street, Soho. *Trans.* 1.

1861 *James Walsh, M.R.C.P., R.N., H.M.S., Hogue, Greenock.

1852 Walter Hayle Walshe, M.D., Consulting Physician to the Hospital for Consumption; 37, Queen Anne street, Cavendish square. *Trans.* 1.

1851 Henry Haynes Walton, Surgeon to the Central London Ophthalmic Hospital, and Surgeon to St. Mary's Hospital; 69, Brook street, Hanover sq. *Trans.* 1. *Pro.* 1.

1852 Daniel Wane, M.D., 20, Grafton street, Berkeley square.

1821 William Tilleard Ward.

1858 John Richard Wardell, M.D., 4, Belmont, Tunbridge Wells.

1846 James Thomas Ware, Consulting Surgeon to the Finsbury Dispensary, and Hon. Surgeon to the Metropolitan Convalescent Institution; 18, Gordon square.

1818 John Ware, Clifton, near Bristol.

1814 †Martin Ware, 18, Gordon square. C. 1844-5. T. 1846. V.P. 1853.

1829 Elias Taylor Warry, M.D., Yeovil, Somerset.

1861 A. T. H. Waters, M.D., Physician to the Liverpool Northern Hospital, and Lecturer on Anatomy and Physiology in the Liverpool Royal Infirmary School of Medicine; 27, Hope Street, Liverpool. *Trans.* 2.

1837 Thomas Watson, M.D., F.R.S., D.C.L., President of the Royal College of Physicians; Physician Extraordinary to H.M. the Queen; Consulting Physician to King's College Hospital; 16, Henrietta street, Cavendish square. C. 1840-1, 1852. V.P. 1845-6.

1861 William Spencer Watson, M.B., Assistant-Surgeon to King's College Hospital; Surgeon to the Islington Dispensary; 69, Great Russell street, Bloomsbury square.

1854 William Webb, M.D., Wirksworth, Derbyshire.

1840 William Woodham Webb, M.D., Cliff House, Kirtley, South Lowestoft, Suffolk.

1842 Frederic Weber, M.D., 44, Green street, Park lane. C. 1857.

Elected

1857 Hermann Weber, M.D., Physician to the German Hospi 49, Finsbury square. *Trans.* 3.

1835 †John Webster, M.D., F.R.S., Physician to the Scottish Hospital, and Consulting Physician to the St. George's and St. James's Dispensary; 20, Brook street, Grosvenor square. C. 1843-4. V.P. 1855-6. *Trans.* 6. *Pro.* 1.

1844 William Wegg, M.D., Physician to the St. George's and St. James's Dispensary; 24, Park lane. L. 1854-8. C. 1861-2.

1861 John Soelberg Wells, Ophthalmic Surgeon to, and Lecturer on Ophthalmic Surgery at, the Middlesex Hospital; 16, Savile row.

1854 Thomas Spencer Wells, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street. *Trans.* 3. *Pro.* 1.

1816 Sir Augustus West, Knt., M.D., Deputy-Inspector of Army Hospitals to the Portuguese Forces; Paris.

1842 †Charles West, M.D., *Vice-President*, Examiner in Midwifery at the University of London, and Physician to the Hospital for Sick Children; 61, Wimpole street, Cavendish square. C. 1855-6. V.P. 1863. *Trans.* 2.

1841 Thomas West, M.D., Daventry, Northamptonshire.

1828 John Whatley, M.D.

1849 John White.

1852 John Wiblin, M.D., Medical Inspector of Emigrants and Recruits; Southampton. *Trans.* 1.

1824 *William John Wickham, Consulting Surgeon to the Hants County Hospital; Winchester, Hants. *Trans.* 1.

1844 Frederic Wildbore, 1, Trafalgar place east, Hackney road.

1837 George Augustus Frederick Wilks, M.D.

1860 Arthur Wynn Williams, M.D., Physician-Accoucheur to the St. George's and St. James's Dispensary; 20, King street, Portman square.

1840 Charles James Blasius Williams, M.D., F.R.S., Consulting Physician to the Hospital for Consumption; 49, Upper Brook street, Grosvenor square. C. 1849-50. V.P. 1860-1.

Elected

1859 *Charles Williams, House-Surgeon to the Norfolk and Norwich Hospital; Norwich.

1859 Joseph Williams, M.D., 8, Tavistock square.

1829 Robert Willis, M.D., Barnes, Surrey. L. 1838-41.

1839 †Erasmus Wilson, F.R.S., Consulting Surgeon to the St. Pancras Infirmary; 17, Henrietta street, Cavendish square. *Trans.* 2.

1850 *Robert Stanton Wise, M.D., Consulting Physician to the Southam Eye and Ear Infirmary; Banbury, Oxfordshire.

1825 Thomas Alexander Wise, M.D., Rostellan Castle, Rostellan, County Cork.

1841 George Leighton Wood, Surgeon to the Bath General Hospital; 27, Queen square, Bath.

1851 John Wood, Assistant-Surgeon to King's College Hospital, and Demonstrator of Anatomy in King's College, London; 4, Montague street, Russell square. *Trans.* 2.

1848 William Wood, M.D., Physician to St. Luke's Hospital for Lunatics; 54, Upper Harley street.

1843 John Ward Woodfall, M.D., Physician to the West Kent Infirmary; Maidstone, Kent.

1833 †Thomas Wormald, Surgeon to St. Bartholomew's Hospital, and Surgeon to the Foundling Hospital; 42, Bedford row. C. 1839. V.P. 1854.

1842 William Collins Worthington, Senior Surgeon to the Lowestoft Infirmary; Lowestoft, Suffolk. *Trans.* 3.

1848 Edward John Wright, 13, Montague place, Clapham road.

1855 Henry G. Wright, M.D., Physician to the Samaritan Free Hospital for Women and Children, and to the St. Pancras Royal General Dispensary; 23, Somerset street, Portman square.

1860 John Wyatt, Surgeon-Major, Coldstream Guards; Vincent square, Westminster.

[It is particularly requested, that any change of Title, Appointment, or Residence, may be communicated to the Secretaries before the 1st of October in each year, in order that the List may be made as correct as possible.]

HONORARY FELLOWS.

(Limited to Twelve.)

Elected

1841 William Thomas Brande, D.C.L., F.R.S., Hon. Professor of Chemistry at the Royal Institution of Great Britain, Member of the Senate of the University of London; Royal Mint, Tower hill.

1835 Sir David Brewster, K.H., D.C.L., LL.D., F.R.S., Corresp. Memb. Institute of France, Principal and Vice-Chancellor of the University of Edinburgh.

1853 Sir Benjamin Collins Brodie, Bart., M.A., F.R.S., Aldrichian Professor of Chemistry in the University of Oxford; Cowley House, Oxford.

1847 Edwin Chadwick, late Commissioner of the Board of Health.

1862 Charles Giles Bridle Daubeny, LL.D., M.D., F.R.S., Hon. M.R.I.A., &c., Professor of Botany, Oxford.

1835 Michael Faraday, D.C.L., F.R.S., Corresp. Memb. Institute of France, Member of the Senate of the University of London, and Fullerian Professor of Chemistry in the Royal Institution.

1857 William Farr, M.D., D.C.L., F.R.S., General Register Office, Somerset House.

1841 Sir John Frederick William Herschel, Bart., D.C.L., F.R.S., Corresp. Memb. Institute of France; Collingwood, near Hawkhurst, Kent.

1835 Sir William Jackson Hooker, K.H., D.C.L., LL.D., F.R.S., F.L.S., Director of the Royal Botanic Gardens, Kew; West Park, Kew.

1847 Richard Owen, D.C.L., LL.D., F.R.S., Corresp. Memb. Institute of France (Foreign Associate of the Academy of Sciences); Superintendent of the Natural History Departments in the British Museum; Sheen Lodge, Mortlake.

1825 The Rev. Adam Sedgwick, A.M., D.C.L., F.R.S., Woodwardian Professor of Geology, Cambridge.

1841 The Rev. William Whewell, D.D., F.R.S., Master of Trinity College, Cambridge.

FOREIGN HONORARY FELLOWS.

(Limited to Twenty.)

Elected

1841 G. Andral, M.D., Member of the Institute and of the Imperial Academy of Medicine, Physician in Ordinary to the Emperor of the French, Professor of Pathology in the Faculty of Medicine; Paris.

1862 Jean Cruveilhier, M.D., Physician to the "Hôpital de la Charité," Professor of Pathological Anatomy to the Faculty of Medicine, Member of the Imperial Academy of Medicine, &c; Paris.

1856 Baron Paul Dubois, Commander of the Legion of Honour, Member of the Imperial Academy of Medicine, Dean of the Faculty of Medicine; Paris.

1835 Carl Johan Ekströmer, M.D., C.M., K.P.S., and W., Physician to the King of Sweden, President of the College of Health, and Director-General of Hospitals; Stockholm.

1841 Christian Gottfried Ehrenberg, Member of the Institute of France; Berlin.

1859 J. Henle, M.D., Professor of Anatomy at Göttingen.

1841 James Jackson, M.D., LL.D., Emeritus Professor of Medicine in the Harvard University, Boston, U.S.

1856 Bernhard Langenbeck, M.D., Professor of Surgery in the University of Berlin.

1843 Baron Justus von Liebig, M.D., Foreign Associate of the Academy of Sciences, Conservator of the Royal Collection, and Professor of Chemistry in the University of Munich.

1841 P. C. A. Louis, M.D., Honorary Physician to the Hôtel-Dieu, Member of the Imperial Academy of Medicine; Paris.

1847 Carlo Matteucci, Professor in the University of Pisa, Member of the Institute of France; Minister of Public Instruction in Italy.

Elected

1853 Valentine Mott, M.D., LL.D., Emeritus Professor of Surgery in the University of New York, late President of the New York Academy of Medicine; New York.

1841 Bartolomeo Panizza, M.D.; Pavia.

1862 Nikolaus Pirogoff, M.D., Professor of Surgery to the Medico-Chirurgical Academy in St. Petersburg, Director of the Anatomical Institute, Consulting Physician to the Hospitals Obuchow, Peter-Paul, and Maria Magdalena; St. Petersburg.

1859 Pierre Rayer, M.D., Commander of the Legion of Honour, Member of the Institute, and of the Imperial Academy of Medicine; Paris.

1850 Carl Rokitanksy, M.D., Curator of the Imperial Pathological Museum, and Professor at the University of Vienna. Referee for Medical and University Education to the Austrian Ministry.

1856 Louis Stromeyer, M.D., Director-General of the Medical Department of the Army of Hanover; Hanover.

1856 A. Velpeau, Member of the Institute, and of the Imperial Academy of Medicine, Professor in the Faculty of Medicine, Surgeon to the "Hôpital de la Charité," President of the Academy of Sciences; Paris.

1856 Rudolph Virchow, M.D., Professor of Pathological Anatomy in the University of Berlin.

1859 W. Vrolik, M.D., Professor of Natural History at Amsterdam.

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for Skin Diseases, Glasgow. (
Clarke, M.D., Hon. Sec.)

ACCOUNT OF A RECENT REMARKABLE CASE

OF

SCROTAL ELEPHANTIASIS,

IN WHICH THE TUMOUR WAS REMOVED.

BY

JOHN WIBLIN, F.R.C.S.,

MEDICAL SUPERINTENDENT OF QUARANTINE, SOUTHAMPTON.

Received Oct. 13th.—Read Nov. 11th, 1862.

The subject of the following history, George F—, was a native of Southampton. He was forty years of age, sallow of complexion, but otherwise seemingly of healthy aspect; married, but without family. From the age of sixteen he had worked as an ordinary labourer on the town quays and in the docks, except during the two years 1835 and 1836, when he was employed in the coasting trade from Southampton to several of the ports of England, Ireland, and Scotland. His habits had always been moderately temperate, and (according to his own belief) his health excellent, having suffered from but one severe illness, when a child.

In the year 1844, whilst in the act of grinding malt, he ruptured himself on both sides. For the relief of this ailment, and under the direction of the parochial medical officer, he wore a suitable truss two or three years. The rupture on the left side becoming rapidly larger, he obtained a new truss, wore it for a year or more, but finding that it afforded little relief, he abandoned its use altogether.

In the year 1848 he contracted syphilis. For the cure of this disorder he applied to a druggist, who (if his own statement is to be credited) gave him corrosive sublimate in tolerably large doses, at intervals, over a period of six months, when he considered himself perfectly cured.

About three months after he had become the subject of syphilis, the foreskin and integuments of the penis began to enlarge, and he constantly experienced a dull, aching pain at the extremity of that organ. From this period the scrotum also gradually increased in size, becoming hard, brawny, heavier, and more pendulous.

Six months after he had contracted syphilis an eruption appeared on the arms, consisting (according to his own description) of large red patches covered with numerous "boils," and ending in suppurating sores, which, on healing, left a distinct scab. This eruption, at the time I first saw him, had continued more or less for a period of six years, and it was present on the scalp, nape of the neck, abdomen, back, pubes, and all over the anterior surface of the hypertrophied scrotum, and possessed the chief characters of *vitiligo*—consisting mainly of large white patches, surrounded by a bronzed margin.

When the case came first under observation, the abnormal growth of the prepuce and scrotum had attained the following dimensions:

Preputial growth.—Length, 16 inches; circumference, 13 inches.

Scrotal growth.—Vertical circumference, from the symphysis pubis, following the raphé of the scrotum, to within two inches of the anus, 3 feet 6 inches; lateral circumference, 3 feet 14 inches.

The scrotum and prepuce had increased very rapidly in size within the two last as compared with previous years. The enlargement had, moreover, become extremely burthensome, and, in some spots, painful; while, in others, particularly where friction was unavoidable in the act of walking, ulceration had taken place, giving rise to a most troublesome and offensive secretion.

These evils had been present some time before surgical aid was sought; and even then the case would not have come under my care but from the parochial medical officer, Dr. Dusautoy, being incapacitated by serious illness from taking charge of it.

From the rarity of the disease in this country, I was anxious to avail myself of whatever aid I might obtain from my professional brethren, and a meeting of the Fellows of the Royal College of Surgeons occurring soon after I had undertaken the care of the case, I brought the patient to town for their inspection. He was seen by a large number of the Fellows, nearly all of whom agreed with me in advising the removal of the morbid growth. As many who were wishful, were unable at the time to see the case, it was temporarily transferred to Mr. Fergusson's care, at King's College Hospital. Subsequently the patient returned to Southampton.

At this period the tumour (the dimensions of which have already been given) was ascertained to weigh, when suspended by means of a steelyard, more than fifty pounds. The prepuce presented a remarkable, nodulated appearance, and the extremity was so curved or involuted by means of the frænum, that on a superficial examination it was liable to be mistaken for the penis itself. Through this involuted, exaggerated portion of the prepuce, the urine dribbled away at times; on some occasions the passage would become distended, and the patient eject the secretion in a long, continued, fine stream. A finger could readily be passed through the external opening, and introduced to the extent of five or six inches; and at the extremity of the canal formed by the elongated prepuce, the glans penis could easily be detected. The scrotal portion of the diseased structures extended from a little above the symphysis pubis to within a few inches of the anus. This portion was nodulated in parts, with smooth intervals; and here and there the surface was scarred with cicatrices of old and recent standing, arising from the eruption already described. On the right side, and at the most dependent part of the growth,

there were indications, it was thought, of a considerable quantity of fluid. On the left side a very large hernial swelling could be recognised without difficulty. This rupture was regarded by myself, and many eminent surgeons who had handled it, to be of a reducible character; and the patient himself entertained a similar opinion, believing that he could return the gut at will.

An operation for the removal of the abnormal mass being determined upon, the first consideration was the practicability of devising some means of diminishing the risk arising from hæmorrhage. Mr. T. Spencer Wells, who was on a visit to me at the time, suggested the construction of a large clamp, formed of two moveable parallel bars, connected by a screw at each extremity; and by the application of which across the neck of the tumour, it was thought that not only the hæmorrhage might be controlled to a great extent, but also the hernial protrusion retained within the abdominal cavity. Means were also adopted to drain the tumour, as far as practicable, of blood. To this end, an iron rod, to which was attached a sliding hook, and tackle and fall for elevating and depressing the mass, as circumstances might require, was firmly fixed to a beam in the ceiling of the room occupied by the patient. By this means, on the day of operation—September the 21st—he being placed on a suitable table, the tumour was well elevated above the level of the body, and kept in this position, surrounded by ice, from 8 a.m. until 2 p.m.; then chloroform was cautiously administered by my fellow-townsman, Dr. Palk, and at 2.20 the operation was commenced.

The clamp being adjusted across the neck of the tumour, a long, curved, sharp-pointed bistoury was introduced into the canal of the enlarged and elongated prepuce, and this was slit up to the point where the glans penis had been previously ascertained to be embedded in the mass. A perpendicular incision, about eight inches long, was made along the dorsum penis to the symphysis pubis. An attempt to introduce a staff into the urethra, with a view to draw the penis up behind the pubic arch, and so

facilitate its subsequent dissection from the surrounding parts, failed. The penis was next seized, rapidly and easily detached, and dragged out of harm's way.

An incision was then made on the right side of the tumour, fourteen or sixteen inches in length, and extending from the lower extremity of the perpendicular cut to the most depending part of the mass. Next the forefinger of the left hand was thrust deeply into the wound, and served as a guide upon which was directed a stout, long, blunt-pointed bistoury, with which the deep-seated structures, the thickness of which averaged from four to five inches, were cut open. Large quantities of serum flowed from the blubber-like structures exposed at each stroke of the knife. The right testicle was found towards the middle of the last incision. It was carefully dissected upwards to near the right inguinal ring, and given into the charge of an assistant.

A similar method of procedure was adopted over the left side of the tumour, but in the confusion of parts there, the testicle was wounded before it was recognised, and the hernial sac opened. The sac was found to be occupied by several coils of intestine, but these had escaped injury from the knife. The pressure of the clamp was immediately diminished, and every effort exerted to return the gut within the abdominal cavity, but without success. It was then determined to remove the tumour in two portions. To effect this object the mass was transfixed, from before backwards, by a long catlin—the point of the knife being brought out in the centre of the perinæum, within two or three inches of the anus. The whole of the mass on the right side was now swept away; then the hernial sac was cautiously dissected out, and, with a few strokes of the knife, the left portion of the tumour was speedily removed.

About ten or a dozen ligatures were required to arrest the bleeding from several very small arterial branches—the only important one being the left spermatic artery, which necessarily required a ligature after the removal of the wounded testicle. The sides of the opening in the sac

were brought together by three stitches; many parts of the divided surfaces were drawn into tolerably good apposition by means of a few sutures; a dressing of lint saturated with oil was made use of; and, finally, the patient was removed from the operating table and conveyed to his bed.

The time occupied in the removal of the tumour was about twenty-one minutes; the ligaturing of arteries, apposition of parts, and dressing, extended over twenty-five minutes more.

The amount of blood lost during the operation was estimated at from thirty to forty ounces. This trifling loss of blood was to be attributed to the admirable manner in which Mr. Spencer Wells regulated the pressure of the clamp, and to the rapidity with which Messrs. H. Smith, Mason, Carr Jackson, and Orsborn followed every stroke of the knife, and most effectually controlled the mouths of the bleeding vessels. The solid portion of the tumour, after removal, weighed nearly thirty pounds.

The following notes of the after-treatment of the case, taken from my case-book, were made by my assistants.

At 5 p.m., two hours after the operation, the pulse was 100, and somewhat feeble. An anodyne was given consisting of one drachm of laudanum in half an ounce of brandy and water. This was presently rejected.

10 p.m.—The patient was restless and complained of pain in the back; ℥xxx Tinct. Opii to be taken in half an ounce of brandy and water every two hours. The first dose was retained a short period. He took iced water freely, and slept three hours during the night.

Sept. 22nd.—The irritability of the stomach still continued; pulse 130; respirations twenty per minute. Soda water and brandy, or a mixture of Chloric Æther and diulte Hydrocyanic Acid to be taken every three hours. Irritability of the stomach somewhat diminished; he took a small quantity of beef tea which was, however, very speedily rejected.

6 p.m.—Bathed in a profuse perspiration; became talkative but was rational. Port wine, brandy, and laudanum,

to be given at regulated intervals. Slept about two hours during the night.

23rd, 2·30 a.m.—Four ounces of urine were passed, and he expressed himself greatly relieved; much gratified by holding the penis, which he had not done before for ten years. Pulse 120; continued to take iced soda-water and brandy, and small doses of laudanum.

5·30 a.m.—Passed six ounces of urine.

6 a.m.—Complained of slight pain in the stomach; slept very little since midnight.

8 a.m.—Passed urine; slight pain in the abdomen, the pulse being 120, full and strong.

10·30 a.m.—Passed twelve ounces of urine.

11 a.m.—Complained of pain in the chest, which was relieved by the hydrocyanic acid mixture.

1 p.m.—Took an egg and wine.

2·30 p.m.—Irritability of stomach greatly diminished.

3 p.m.—Passed a motion in bed; milk and brandy to be given every two hours.

5·30 p.m.—Passed a copious, well-formed motion; pulse 120, full and strong.

24th, 3 a.m.—Had a little sleep, and passed urine freely; stated that he felt much better and stronger.

6·30 a.m.—Passed urine; took an egg beaten up in tea, and a slice of toast, slept again for an hour or more.

11 a.m.—Pulse 119; passed urine copiously; irritability of stomach troublesome.

2·40 p.m.—Passed a copious and healthy-looking motion; complains of slight pain over the abdomen; ordered turpentine stupes; pulse 130, very full.

25th.—Did not pass so good a night as the last.

8·30 a.m.—Pulse 100, tongue moist, abdomen painful and slightly tympanitic.

2·30 p.m.—The wounds were dressed for the first time since the operation; the hernial sac and the penis were covered with healthy pus; a little spirit of turpentine was added to the dressing.

5·30 p.m.—Appears comfortable; very communicative.

6 p.m.—Passed a good motion and a large quantity of urine.

11·45 p.m.—Abdomen became greatly distended; the respiration and the whole system disturbed.

12 p.m.—Passed a motion, with great relief to the painful abdominal distension; irritability of stomach returned; vomiting; pulse 110; tongue moist and clean.

26th, 2·30 a.m.—Passed another good motion; slept for an hour and a half.

3·30 a.m.—Vomiting and distension of abdomen increased; hot-turpentine stupes made use of, and the hydrocyanic acid mixture with milk and brandy.

6 a.m.—Very restless; great augmentation of abdominal distension; pulse 120; tongue clean and moist; complains of great prostration; takes alcoholic beverages freely, but the stomach will not retain them.

8 p.m.—Abdominal distension still greater; extreme difficulty of breathing.

10 a.m.—Expired somewhat suddenly.

Examination of the body on the morning of the 27th.—The abdominal cavity and the hernial sac and its contents were alone submitted to inspection. The former presented no morbid appearance, except an enormously distended condition of the intestines. The latter showed the nature and extent of the mischief which had caused death. The sac measured in its longitudinal (antero-posterior) circumference nearly thirty inches, and in its horizontal circumference about twenty inches; it was unusually thickened, in some parts to the extent of half an inch. The contents consisted of large coils of small intestine firmly matted together by old adhesions; and the cæcum and appendix vermiformis were tightly bound by fibrinous bands, of long standing, to the upper and outer portion. There was no strangulation nor discoloration of the gut at the mouth of the sac, and the finger could be readily passed around the intestine occupying it; but the areolar tissue in the vicinity of the accidental incisions, as well as the lowermost coils of the

protruded gut were gangrenous. This was unquestionably the cause of death.

An examination of the tumour, made soon after its removal, by Mr. Flower, of the Royal College of Surgeons, showed the following characters:

The substance consisted almost entirely of fibro-cellular tissue, abundantly infiltrated with serum, and containing in some parts fat, collected in roundish masses, but not in any large quantity. Externally, it was directly continuous with the deeper layers of integument.

Microscopically the structure could scarcely be distinguished from that of ordinary connective tissue, consisting of bundles of very delicate, colourless, wavy filaments, with a few scattered nuclei among them. It was gelatinized by acetic acid, presenting after the addition of that reagent a soft-looking homogeneous mass, with scattered granules and nuclei, and a few blood-vessels and elastic fibres. These last were very sparingly found, except in the dermal portions of the tumour.

Such is a history of this case and of the proceedings which were adopted in its treatment. The rarity of scrotal elephantiasis in this country will, perhaps, justify the addition of a tabulated summary of the chief recorded instances of the affection.

	Authority.	Age.	Native of what country.	Dimensions.	Weight.	Especial points of interest.	Treatment.	Result.	Examination of growth.	References.
1	Dionis (died 1718)	—	Negro, Pondicherry	1 ft. 3 in. length; ditto breath, 3 ft. 6 in. circumference	60 lbs. (estimated)	Uneven, and hard as a stone	—	—	—	'Cours d'Operations de Chirurgie démonstrécs au Jardin Royal,' 2de ed.
2	Cheselden	—	Negro	—	—	Enormously developed scrotum	—	—	—	Depicted in 4th ed. of 'Anatomy.'
3	Walther	—	—	—	40 lbs. (nearly)	Descended to knees	—	—	Skin of scrotum 3 inches thicker than natural; cellular membrane surrounding testicles distended by a viscous fluid	—
4	Morgagni	—	—	—	—	Refers to tumour as large as the heads of two men joined together. Mentions points of another tumour	—	—	—	'Epistolæ Anatomicæ,' xliii, Art. 42.
5	Michie de la Touche	70	—	1 ft. 6 in. length, 3 ft. 1 in. circumference	—	—	—	—	—	—

6	Chopart	50	Negro, Guinea Coast (resident twenty years at Martinique)	2½ ft. length, 2 ft. 2 in. circumference of upper part, 3 ft. 2 in. circumference of lower part	40 lbs.	Scrotum reached to the ankles	—	—	—	'Traité des Maladies Chirurgicales.'
7	Raymondon	40	—	23 in. length, 32 in. circumference of largest part	29 lbs.	Thirteen years growing to this size. Caused neither pain nor inconvenience, except from weight	Punctured; removed. Penis and right testicle (diseased) taken away	Death six hours after operation	—	Referred to by Chopart.
8	Imbert de Lonnes	—	Frenchman. (A minister of State)	—	30 lbs.	Tumour had existed fourteen years	Removed. Operation lasted two hours and a half	Recovery	—	—
9	Larrey	—	—	—	—	Details several cases in his account of the Egyptian campaign. Operated successfully in one case	—	—	—	'Mémoires de la Chirurgie Militaire,' vol. ii, p. 110.
10	Hendy	50	Negro, Barbadoes	24 in. length, 6 ft. circumference	—	Surface of mass rough and uneven. Felt to the touch as if it contained half-coagulated fluid. No part of penis could be discovered. Urine voided at an opening 20 inches from pubis	—	Mortified. Death	—	(Dr. Hendy knew of five other cases in which the scrotum sloughed, so as to denude the testicles.)

	Authority.	Age.	Native of what country.	Dimensions.	Weight.	Especial points of interest.	Treatment.	Result.	Examination of growth.	References.
11	Corse	—	Hindoo	25 in. length, 38 in. circumference of middle, 14 in. circumference of root, 20 in. circumference near the end	—	—	—	—	—	—
12	—	—	Negro (?)	—	—	Scrotum so excessively developed, that the patient was obliged to keep constantly in bed	—	—	—	'Phil. Trans.'
13	Dadd	—	Native of Africa (West Indies)	Penis alone affected; 14 in. length, 12½ in. circumference	—	—	—	—	—	—
14	Titley	—	Negro	29 in. length, 43 in. circumference	70 lbs.	Descended to within an inch of the ground, dragging down the abdominal integuments. Surface equal and smooth, superficial veins much enlarged	Removed. Penis dissected out, testicles cut away with the mass	Recovery	Testicles occupied normal position. Left testicle enlarged; tunica vaginalis of right testicle contained three pints of fluid. Scrotum from two to four and a half inches in thickness; cavity filled with a gelatinous matter, which formed a	'Pract. Treatise on Diseases of the Genitals of the Male,' Lond., 1829, pp. 312-314. N.B.—Dr. Titley operated in five other cases, in all of which the operator was successful. He also mentions

									jelly on cooling. Substance of scrotum and investment of spermatic cords, infiltrated with like matter.	several cases successfully operated on by Dr. Caines.
15	Ditto	—	Negro (?) (St. Christopher's)	—	165 lbs.	Not under Dr. Titley's care	Removed	Death	—	—
16	Ditto	—	—	20 in. length, 14 in. circumference	—	Ditto	Removed	Death	—	—
17	Liston	22	—	42 in. circumference, 40 in. from verge of anus to pubis	44 lbs.	Skin coarse and much stretched; extended beneath patient's knees. Urine escaped through the fissures of a large warty mass	Removed. An attempt to save some portions of the genital organs obliged to be given up from the enormous hæmorrhage	Recovery	Substance of tumour dense, resembling in appearance the mammary gland. Same character pervaded all the tissues	'Edin. Med. Journ.,' 1823.
18	Wells	30	Negro	—	10 lbs.	—	Removed. Penis and testicles saved. Veins numerous and enormously large; hæmorrhage considerable. One vein as large as vena cava. The patient "did remarkably well after the operation, and went home in three months—et satis ad veneram pollebat"	—	—	'Amer. Journ. of Med. Science,' May, 1828.

	Authority.	Age.	Native of what country.	Dimensions.	Weight.	Especial points of interest.	Treatment.	Result.	Examination of growth.	References.
19	Clot. Bay	—	—	—	110 lbs.	—	Removed	—	—	'Travaux de l'Ecole de Med. d'Abou., Zabel, Egypte,' Paris, 1833, p. 131.
20	Delpech	—	—	—	60 lbs.	—	Removed	Wounds healed up in two months. Patient returned home; after a few weeks fell ill and died; a large abscess found in liver	—	Von Graefe und von Walther's 'Journal für Chirurgie und Angenheilkunde,' vol. ii, p. 647.
21	Aston Key April, 1831.	32	Chinese	4 ft. circumference	56 lbs.	Growth of ten years; involving genitals.	Removed. An attempt to save the genitals failed	Death	Hypertrophied integuments and connective tissue.	'London Medical Gazette,' vol. viii, p. 93. Preparations in Museum of Guy's Hospital. No. 1620[69].

The following notes may also prove of interest :

M. Scuts-Amdial extirpated a tumour of the scrotum of enormous size, at Rio Janeiro, in 1843, with only a trifling loss of blood. The tumour weighed 143 pounds, and the patient recovered.

Dr. Goodwin, of Calcutta, removed a scrotal tumour weighing upwards of fifty pounds. The patient only lived six hours, the hæmorrhage being uncontrollable.

Dr. O'Brien, who has, or had, charge of the Hospital for Elephantiasis, in Calcutta, states that the largest scrotal tumour coming under his observation was two feet in length, and five feet in circumference; it weighed ninety pounds, including a hydrocele which, he says, is almost always present in the affection. Dr. O'Brien, when operating in these cases, always placed the patient under the influence of chloroform, but kept a galvanic battery at hand ; because, he states, the weight of such a tumour naturally drags the abdominal walls to a vast extent, and when the tension and pressure are removed, there is relaxation of these tissues, and consequent collapse of the diaphragm. He describes a case in which the patient, who had not lost a pint of blood, and had been only four minutes and a half under chloroform, was declared dead by his assistants, but was brought round by the use of the battery. 'Dublin Hospital Gazette,' January 1, 1857.

Mr. Godfrey, superintending surgeon in the East India Company's service, removed an immense scrotal tumour from a native, aged thirty, residing in the suburbs of Madras. The length of the tumour was twenty-six inches, the circumference a yard and a half. The operation was performed thus : — A piece of stick was passed into the preputial orifice as a director, and an incision made down to the penis. Another incision was then carried obliquely from the right groin to join the first incision. On continuing this incision, however, the gush of blood from some large veins was so terrific and uncontrollable, that to save the patient's life the whole of the diseased mass was removed as speedily as possible. When the bleeding surface was

fully exposed, the hæmorrhage was checked by ligatures and pressure. The wound was closed by needles and twisted sutures. The case did well, the man making a good recovery. The tumour weighed seventy pounds.

Mr. Godfrey suggests (in order to effect the same purpose—the control of hæmorrhage—which in my case was aimed at by the use of the clamp) that, in operations of this character, a needle, carrying a strong ligature, should be passed through the neck of the tumour on each side of the penis. The ligatures being then firmly tied on the outer side, so that the two halves of the neck would be enclosed, the flow of blood during the operation might in some degree be checked.

Many other examples of scrotal elephantiasis are recorded in the journals. Dr. Esdaile, of Calcutta, has described numerous instances, and he must have operated in nearly 200 cases. In the 'Lancet' of 28th September, 1861, a case is published which occurred under the care of Mr. Fergusson, at King's College Hospital, and in which a scrotal tumour weighing six pounds, was removed with success. Again, in a recent number of the 'Edinburgh Medical Journal,' Dr. Fayrer, Professor of Surgery in the Bengal Medical College, in a most interesting paper on "The Scrotal Elephantiasis of Bengal," gives brief accounts of fourteen cases of the malady in which he operated between July, 1859, and September, 1861.

Of these cases, nine were cured, four died (three from pyæmia and one from shock), and one was still under treatment when his paper was written. The weight of the tumours removed varied from three pounds to sixty-six pounds.

Professor Fayrer's description of the operation of removal is peculiarly clear and instructive. He says:

"The operation for removal of a scrotal tumour is simple enough, but it requires determination and expedition. It needs also the aid of several intelligent assistants.

"Before commencing, it is well to have the tumour raised and supported in a vertical position for half-an-hour, to

drain it of blood as much as possible; then, the patient having been placed in a recumbent position on an ordinary table, with the nates brought near the end of it, he is to be put under the influence of chloroform, and the incisions are to be commenced.

"The instruments required are, a long steel director to guide the knife in cutting down to the penis, a large scalpel, an amputating knife, artery forceps, and plenty of silk ligatures; a few of the small bull-dog forceps also are useful in temporarily controlling inconvenient hæmorrhage from divided veins.

"Several assistants are required to hold back the legs, raise the penis and testes, support the tumour, and rapidly secure the numerous bleeding points. These being provided, the operation may be begun. The director is to be introduced into the passage at the bottom of which lies the glans penis, and that organ exposed, by laying open with either the long catlin, or a sharp-pointed bistoury, the dense tissue covering it. The prepuce is frequently found quite healthy and dragged forward. If so, it is well to reflect a portion of it as a future covering for the penis, which, if well managed in the subsequent dressing, becomes a better integument than the cicatrix tissue which must otherwise take its place. In the event of the prepuce being involved, or even suspected of being involved in the disease, it should be carefully dissected away like the rest of the thickened tissue. Having exposed the penis, it is to be raised and carefully dissected out, with or without the prepuce as the case may be; it must be carefully held back, and out of the way of the next incisions, by an assistant, and care must be taken in clearing it out of the morbid tissue, not to divide the suspensory ligament, or difficulty will attend the subsequent treatment in keeping it in its proper place with reference to the testes, which may be drawn by the granulation and cicatrization above the penis.

"The next step is to make a deep and bold incision down to the tunica vaginalis on one side. In a large tumour

several incisions will be needed before the tunica vaginalis is exposed, which probably will be found much thickened and distended with quantities of fluid, forming large hydroceles. These should be laid open, and if the tunica vaginalis be much thickened, it should be removed; if not so affected, and the testicle not enlarged, it need not be interfered with. The testicle, with or without the covering, according to circumstances, is then, like the penis, to be dissected out and reflected, being held upwards with the penis; a similar proceeding is to be carried out on the opposite side, and then, the genital organs being held up towards the abdomen, the tumour is to be removed by connecting transversely the three vertical incisions already made, and then, either with the scalpel or the amputating knife, the remaining portion of the neck of the tumour is to be cut through: it is well before separating it, to mark out on the perinæal aspect by an incision, the line at which the removal is to be completed. During the operation the bleeding vessels are to be commanded by the fingers of assistants, and subsequently ligatures (twenty to thirty are frequently necessary) are to be applied: any large vein may be controlled by the bull-dog forceps. It is well that even the most minute bleeding points should be ligatured; otherwise, when reaction occurs, there may be hæmorrhage, and it may be necessary to remove the dressings, whereby much suffering is occasioned to the patient. The bleeding having been perfectly controlled, the testes, with their elongated cords, often extended to the length of a foot or even eighteen inches and much thickened, are to be raised and applied to the surface of the wound; the penis is to be enveloped in a fold of oiled lint, and thus kept apart from the testes, which are also covered and supported in position by oiled cloths."

In the 'Ephemerides Germanicæ' is an account of a scrotal tumour which weighed 200 lbs. This is the largest on record.

Finally, I would direct attention to a curious old painting

preserved in the Medical Museum of King's College (London), which represents a man suffering from scrotal elephantiasis. He is depicted sitting on a low seat, and making use of the flattened, upper surface of the tumour, projecting between his thighs, as a table, on which is deposited his food.

DESCRIPTION OF PLATE I.

Fig. 1. Clamp applied to the neck of swelling before the operation.

Fig. 2. Lines of Incisions; viz., 1. Slitting up of prepuce. 2. Corona glandis. 3. Incision from above symphysis pubis to the penis. 4, 4. Incision on right side of growth. 5, 5. Same on left side. 6. Nodulated appearance of prepuce. 7. Circular incision around the penis to detach it from surrounding structures.

Fig. 3. 1, 1. Line of incision by transfixion. 2, 2, 2. Parts included in the first portion removed. 3. Penis dissected out, and held aside by an assistant. 4. Right testicle. 5. Large hernial sac. 6. Contents of sac.

Fig. 4. 1. Peritoneal covering. 2. Intestine. 3, 3. Seat of old adhesions. 4. Ligatures to opening. 5. Testicle. 6. Penis (after the operation).

Fig. 1.

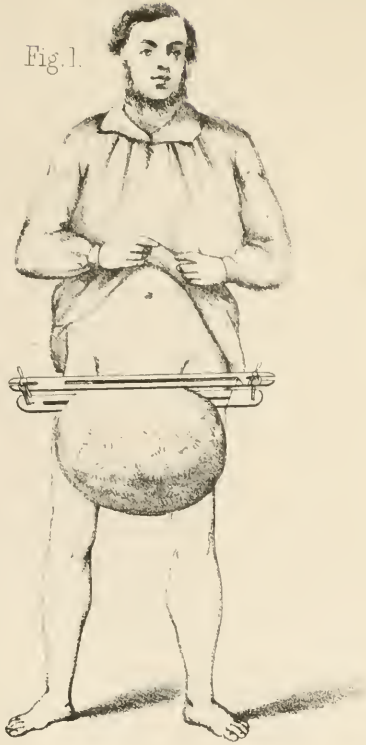


Fig. 2.

Fig. 3.

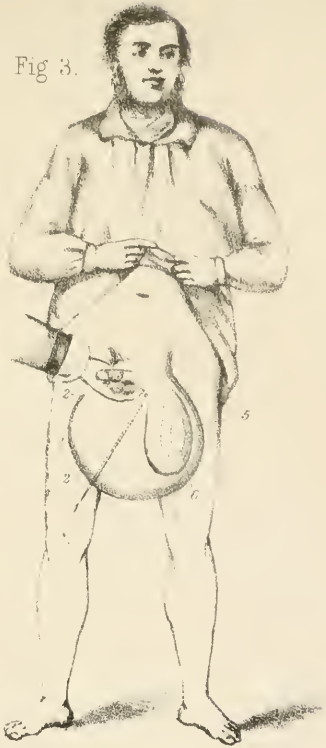


Fig. 4.

G.H.F

W.West imp.

SUPPLEMENT TO A PAPER,

ENTITLED

AN ANALYSIS OF 162 CASES

OF

OVARIOTOMY,

WHICH HAVE OCCURRED IN GREAT BRITAIN,

PUBLISHED IN VOLUME XXXIV OF THE MEDICO-CHIRURGICAL TRANSACTIONS.

BY

ROBERT LEE, M.D., F.R.S.,

PHYSICIAN TO ST. GEORGE'S HOSPITAL.

Received Sept. 26th.—Read Nov. 11th, 1862.

In a postscript to this paper it is stated, that in 60 cases the ovarian disease could not be removed; 19 of these proved fatal. Of the remaining 102 cases in which the operation was completed, 42 terminated fatally. The present condition of the 60 patients who recovered is very imperfectly known. The last case contained in this table occurred on the 7th May, 1851, and terminated fatally.

In the course of the last eleven years, the operation of ovariotomy has been performed frequently in Great Britain, and the opinion has come to prevail, that the diagnosis of ovarian diseases is more easy and certain than the results of this analysis indicated, and that the operation of ovariotomy is attended with much less danger than I have represented. The interests of humanity require that as far as possible a complete view should be given of the results of all the cases which have occurred in this country, fortunate and unfortunate, during the last eleven years.

But as all the cases of recovery have been published, and many of those which have terminated fatally with which I have become acquainted, have remained unpublished, it must be obvious that no pratical conclusions can be drawn from what are called the statistics of ovariotomy, and which are only calculated to mislead. In some of these unpublished cases, after an incision had been made of great length through the abdominal parietes, the ovarian mass was found so firmly adherent that it could not be removed. In other cases, where the ovarian cysts and tumours were readily removed, and where recovery was anticipated, death took place in no long period from hæmorrhage, peritonitis, the injury inflicted upon the intestines, or the shock of the operation.

In the course of the last eleven years, a very large number of cases of ovarian disease have come under my observation in private practice and in the Burton Ward in St. George's Hospital, of which accurate written reports have been preserved. In none of these have I dared to recommend the patients to have the operation of ovariotomy performed; and from the slow progress which many of these cases have made, enduring for years, and the comparatively slight inconvenience which has been produced, the evidence to my mind is conclusive, that the course which I have recommended has contributed largely to the preservation of human life. In a great number of these, none but those practitioners who are blind to the dangers which surround the operation would have ventured to operate.

I have strong reason for believing that if the whole truth on this subject were made known, the results would differ widely from those which have recently been published.

CASE OF POISONING

BY

OIL OF WORMWOOD

(ARTEMISIA ABSINTHIUM).

BY

WILLIAM SMITH,

SURGEON TO THE CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.

Received Aug. 27th.—Read Nov. 25th, 1862.

I AM not aware that any case has been recorded of poisoning by the above substance, and I have therefore considered it desirable to place the following brief account before our Society. From the symptoms, it is evident that the poison may be classed amongst the narcotico-irritants, causing stupor and insensibility, and at the same time producing local irritation of the mucous membrane of the stomach. No allusion is made to it in Taylor "On Poisons." Dr. Thomson, in the 'London Dispensatory' says it (the artemisia absinthium) possesses a narcotic influence, produced by the essential oil, and that when it is desirable to free the remedy from that property it should be given in decoction, as the boiling would dissipate the essential oil on which it depends. Lastly, in Pereira's 'Materia Medica,' p. 1351, vol. ii, is the following notice of its supposed poisonous effects: "Borrich says the milk rendered bitter by it proves noxious to the infant. Large doses irritate the stomach and excite the vascular system. A specific influence over the nervous system, characterised by headache, giddiness, &c., has been ascribed to it. This has been usually

supposed to depend on the volatile oil, but a similar power has been assigned to the bitter principle." How much of the effects in the following case may be traced to the general results of a large dose of an essential oil, I have no data to determine; but I believe that the narcotic symptoms must, under any circumstances, be ascribed to a specific injurious agent.

A druggist's shopman in this town was found early one morning by his master, lying on the floor of the shop, perfectly insensible, convulsed, and foaming at the mouth. As the man had never suffered from fits, and the symptoms were of an alarming character, I was at once sent for. I found him no longer violently convulsed; but insensible, the jaws clenched, and the pupils dilated. The pulse was weak, slow, and compressible. From time to time he uttered incoherent expressions, and attempted to vomit. With some difficulty I administered to him repeated doses of stimulants, sal volatile and water, lime water, and an emetic of mustard and sulphate of zinc. The nature of the poison had been already made manifest to me.

Free vomiting ensued, and consciousness partially returned. Artificial warmth was applied to the extremities, and a little brandy and water given at intervals, with draughts of milk and lime water. He gradually recovered. The matters vomited smelt strongly of oil of wormwood, and the nature of the poison was placed beyond doubt by the discovery of the bottle, with marks on its mouth of the oil having been recently poured out. The druggist stated that at least half an ounce had been taken. From the persistent smell of the Ol. Absinthii in the ejected matters, after repeated vomiting, I think this was even less than the real quantity.

The man, on recovering had totally forgotten all circumstances connected with the case, and persisted in stating that he knew no reason why he should have taken it. It is, however, probable that he imagined himself suffering from ascarides, and sought relief in a good dose of this vegetable anthelmintic.

A CONTRIBUTION

TO THE

NATURAL HISTORY

OF

HEREDITARY TRANSMISSION.

BY

HORACE DOBELL, M.D.,

PHYSICIAN TO THE ROYAL INFIRMARY FOR DISEASES OF THE CHEST.

Received Oct. 26th.—Read Nov. 25th, 1862.

In this case I have been able to trace the history of a palpable defect through five generations, with absolute certainty as to the correctness of the facts. I have, therefore, thought it worth presenting to the Society, although its value can be only that of one brick in a building; and I do not propose to draw any conclusions from such limited premises, but simply to point out what are the leading peculiarities of the case.

In order to make these clear, at a glance, I have drawn up a genealogical tree of the five generations, and have procured photographs of the transmitted deformity.

This transmitted defect is thus described in a letter from one of the members of the family in which it exists. "We are accustomed to call our hands double jointed, because all the joints of the fingers are thick. Another characteristic is that the ring and little fingers are very crooked from the last joint. . . . . The peculiarity is distinguishable at

birth. . . . . We think the joints have become less in size in the present generation, and, often, it is only the middle finger, the joints of which are very thick; but the ring and little fingers of both hands are as crooked now as they were four generations ago. Our forefathers were men of respectable lives and independent fortune, not engaged, therefore, in any special manual occupations."[1]

It has been observed by the family that those children who inherit the deformity from the father, have it in the more marked degree; those who inherit it from the mother have it in the less marked degree.

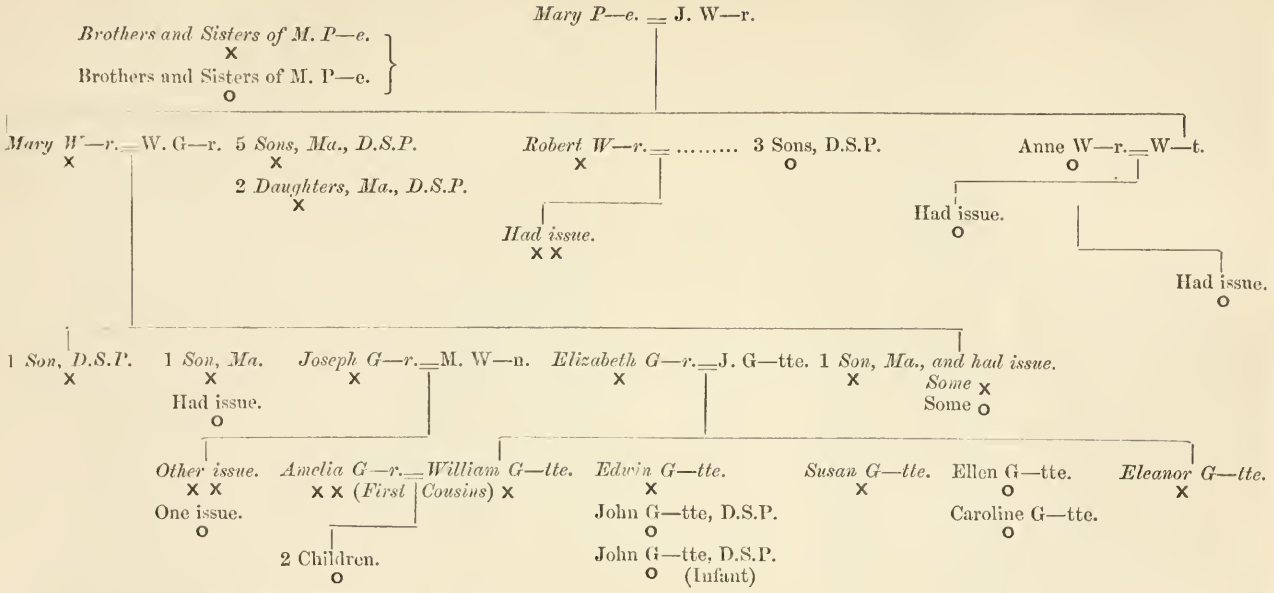
No drawing is preserved of the hand of Mary P—e, the first person in the history, and we do not know whether the more or less degree of deformity existed in her case. Neither is it known whether Mary P—e inherited the hand from her father or from her mother. It is known that some of her brothers and some of her sisters had deformed hands, and that some of her brothers and some of her sisters had perfect hands; one of her sisters with perfect hands married into a well-known aristocratic family, and her descendants have all had perfect hands.

There has never occurred an instance in which the deformed hands have appeared in the children of parents whose hands were perfect, and thus the defect once lost has, apparently, been lost for ever. An example of this is given in the tree in the case of Anne W—r, who had perfect hands, and both her children and grand-children had perfect hands also.

The next point of significance, and perhaps the most interesting, may be observed in the fourth and fifth generations. A marriage occurred between Amelia G—r, who inherited the deformed hands in the *more marked degree*, and her first cousin, William G—tte, who inherited them

[1] Three photographs were exhibited:—1. The typical hand taken from the writer of the letter quoted. 2. The hand of Eleanor G—tte (the fourth generation), showing the deformity in its *less marked degree*. 3. The hand of Amelia G—r, showing the deformity in its *more marked degree*.

Hereditary Deformity of the Hands.—Five Generations.


Mary P—e. = J. W—r.
Brothers and Sisters of M. P—e. ×
Brothers and Sisters of M. P—e. o
Mary W—r. = W. G—r. × 5 *Sons, Ma., D.S.P.* ×
2 *Daughters, Ma., D.S.P.* ×
Robert W—r. × = ... 3 Sons, D.S.P. o
Had issue. ××
Anne W—r. = W—t. o
Had issue. o
Had issue. o
1 *Son, D.S.P.* ×
1 *Son, Ma.* ×
Had issue. o
Joseph G—r. × = M. W—n.
Elizabeth G—r. × = J. G—tte. 1 *Son, Ma., and had issue.* ×
Some ×
Some o
Other issue. ××
One issue. o
Amelia G—r. ×× = *William G—tte.* (*First Cousins*) ×
2 Children. o
Edwin G—tte. ×
John G—tte, D.S.P. o
John G—tte, D.S.P. o (Infant)
Susan G—tte. ×
Ellen G—tte. o
Caroline G—tte. o
Eleanor G—tte. ×

Italics indicate that the hands were deformed. One cross means the less marked degree. Two crosses mean the more marked degree. A cypher means that the hands were perfect. Ma. means married. D.S.P. means died without issue.

in the *less marked degree*. They have had two children, both of whom have perfect hands. These children are still very young, so that it remains to be seen whether the deformity will appear in any future children that may be born to these parents, or whether it will appear in these children as they grow older, or whether it has become extinct in this branch of the family.

At present, no other members of the fourth generation have married.

The last points for remark are—1st, that the deformity has affected males and females indiscriminately; and, 2nd, that in some cases the children with deformed hands have been the elder in the family, in some the younger; no rule in this respect having been observed.

CASE

OF A

WOMAN WITH THREE HANDS;

ILLUSTRATED BY

ANALOGOUS MALFORMATIONS IN THE LOWER ANIMALS.

BY

J. JARDINE MURRAY, F.R.C.S.E., Brighton.

COMMUNICATED BY

C. H. MOORE, Esq., Hon. Sec.

Received Nov. 10th.—Read Dec. 9th, 1862.

The following case derives additional interest from the circumstance that no similar malformation appears to have been met with in the human species.

Its nature is in some measure explained and illustrated by referring to comparative teratology. I am permitted by the President of the Royal College of Surgeons of England to exhibit drawings of two preparations of double fore-foot in the pig,[1] in both of which instances the abnormal anatomy of the limb seems to be quite analogous to that of this woman's arm. It is to be regretted that the preparations have not been carefully dissected, for the arrangement of the soft parts might have assisted our specu-

[1] These preparations, which are both dried, are thus described in the Catalogue of the Museum of the Royal College of Surgeons:

"No. 285. A double foot of a pig (Sus domesticus). Hunter."

"No. 286. The right fore-foot of a pig with a supernumerary foot attached to the carpus. W. Blizard."

lations on the abnormal anatomy of the case now under consideration. In both instances of double fore-foot in the pig, as also, I believe, in this double-hand, the duplicity of bony structure begins at the carpus.

By the kindness of my friend, Dr. Cobbold, I am enabled to exhibit drawings of a somewhat similar malformation occurring in birds.

Anne S—, æt. 38, residing in Brighton, is a well-developed, healthy, active, and intelligent woman. She is married and has had one child, now seven years of age, who is in every respect normal. She is not aware that any relative of hers has been, or is, the subject of malformation.

The left upper extremity is the only part of her body which is abnormal in development. The limb is very muscular. The shoulder-joint is natural. The external condyloid ridge of the humerus is strongly defined. The elbow-joint may be fully extended, but flexion cannot be carried further than is represented in fig. 1, and the impediment seems to be the unusually large coronoid process of the ulna. The muscles and tendons of the fore-arm are so prominent that it is not at first easy to decide whether there be a second radius or ulna; but after numerous examinations made under favorable circumstances, I feel sure that the duplicity of bony structure begins at the carpus. Pronation and supination are freely performed.

The following measurements show the relative proportions of the right and left fore-arms:

	Right.	Left (abnormal).
1. Round olecranon and bend of elbow .	$9\frac{1}{4}$ inches.	$11\frac{3}{4}$ inches.
2. Round middle of fore-arm . .	9 „	9 „
3. Round wrist	6 „	7 „

The photographs give a better idea of the position and relations of the double-hand than could be conveyed in words, and it is therefore only necessary to supply such information as they do not convey to the eye.

The supernumerary hand is somewhat smaller than that which it so strangely accompanies. The fingers of both

hands are clubbed at their tips. The middle and ring fingers of the supernumerary hand are webbed [1] as far as the proximal joints, and the movements of the fingers of this hand are somewhat stiff and imperfect. The thumbs seem to be represented only by the prominence on the dorsal surface seen in fig. 3. The bursa on the back of the wrist, and also the smaller one on the knuckle of the index finger of the larger hand, show that, while at work as a charwoman, the patient is in the habit of leaning on the flexed carpus; and, from the rigidly arched conformation of the metacarpal portion of the double-hand, it is evident that she could not lean on the palm. The usual position of the hands, when closed, is seen in fig. 1. The power of independent action of the fingers is very limited. No single finger can be retained fully extended while the other seven fingers are flexed. But if both index fingers be extended, then the remaining six fingers may be flexed; or the four fingers of either hand, together with the index finger of the other, may be extended, while the remaining three fingers are flexed. The index fingers cannot be flexed while the other fingers are extended, nor can the little fingers be extended while the others are flexed. The limited character of these movements is probably due partly to want of training and partly to peculiarity in the arrangement of the extensor tendons. The double-hand can grasp firmly, although the maximum of power is not equal to that of the right hand. Sensation appears to be equally acute in all the three hands.

The case affords interesting material for the speculations of the anatomist; and the teratologist will remember that, in the progressive development of the upper extremity in the fœtus, the fore-arm is formed subsequently to the hand, and at an earlier period than the arm and shoulder.

[1] The web is due to absence of fission, and is properly an arrest of development; for, in the embryo, the rudiments of hands and feet do not at first present any division of the fingers and toes.

DESCRIPTION OF PLATE II.

Fig. 1.—Exhibits the usual position of the hands when closed, and the greatest possible extent of flexion of the fore-arm.

Fig. 2.—The palmar aspect of the double-hand. All the fingers are extended, and the imperfections of the second, third, and fourth fingers of the supernumerary hand are well shown.

Fig. 3.—The dorsal aspect. In a line with the cleft between the index fingers is seen a prominence representing the thumbs. The bursæ on the wrist and knuckle of the first finger of the larger hand are also noticeable.

The figures are taken from large photographs by Messrs. Hennah and Kent, copies of which are in the possession of the Royal Medical and Chirurgical Society. A plaster cast of the arm may be seen in the Museum of the Royal College of Surgeons of England.

Fig. 1.

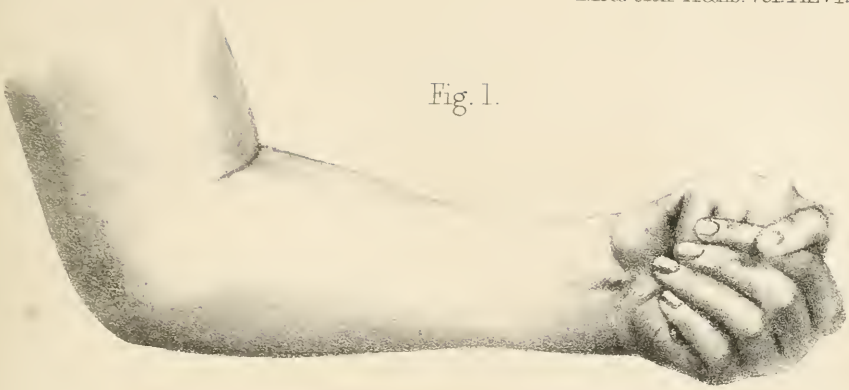


Fig. 2.

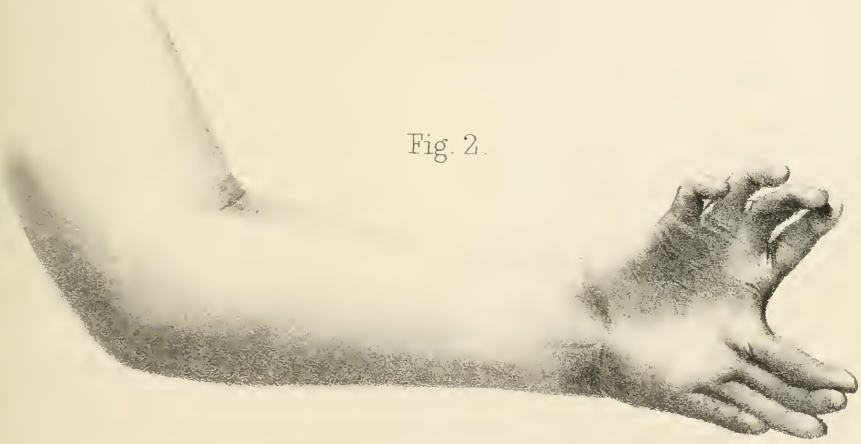
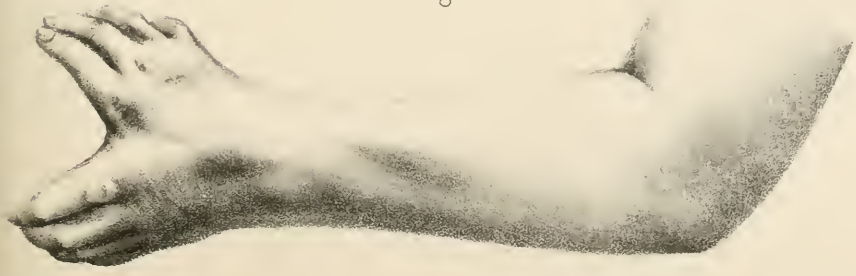


Fig. 3.



G.H.F.

W West imp.

ON THE HISTORY AND PROGRESS

OF

OVARIOTOMY IN GREAT BRITAIN,

WITH

OBSERVATIONS FOUNDED ON PERSONAL EXPERIENCE OF THE OPERATION IN FIFTY CASES.

BY

T. SPENCER WELLS, F.R.C.S.,

SURGEON TO THE SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, LECTURER ON SURGERY AT THE GROSVENOR PLACE SCHOOL OF MEDICINE.

Received Nov. 18th.—Read Dec. 9th, 1862.

Although many learned arguments have been held as to the precise nature of the operation alluded to by Athenæus, Galen, and other ancient writers, as the Castration of Women, and much time has been wasted in disputes as to the meaning of some passages which lead to the belief that, in many of the cases alluded to, the operation consisted in *infibulation* of the external parts, and as to the meaning of other passages which would seem to imply that by this *castration* was meant extirpation of the uterus—although some writers believed that the ovaries of women had been removed by barbarians at various historical periods—although Pott and other surgeons had removed ovaries when protruded from the abdomen and forming part of hernial tumours—and although *gelding* or *spaying* had long been practised on various domesticated animals, the fact that healthy ovaries had been removed did not suggest the idea that diseased ovaries might be extirpated until a late period in the History of Surgery.

Two or three passages might be quoted from writers of the seventeenth century, to prove that the idea of extirpating ovarian cysts had suggested itself, but that it had been regarded as too perilous to be justifiable; and it is to the British School of Medicine, and especially to the teaching of William Hunter and of John Bell, that the actual performance of the operation of ovariotomy is to be traced.

In Dr. William Hunter's paper "On the Cellular Tissue," published in 1762, in the second volume of the 'Medical Observations and Inquiries,' after stating that the trochar is almost the only palliative in the treatment of ovarian dropsy, he says—"It has been proposed, indeed, by modern surgeons, deservedly of the first reputation, to attempt a radical cure by incision and suppuration, or by excision of the cyst." Then, in support of his opinion, that "excision can hardly be attempted," he asks, "must not the wound made in the belly for the excision of the cyst or cysts be large enough to admit the surgeon's whole hand? Must it not be often a good deal larger; as when the tumour is large and composed of a number of bags filled with jelly? Would not such a wound be attended with a good deal of danger from itself? Would it not be very difficult to cut the *peduncle,* or root of the *tumour,* with one hand only introduced? Would it not be impossible to do this where the adhesions proved to be considerable? Would there not be great danger of wounding the intestines? If any considerable branch of the spermatic artery should be opened, what could the surgeon do to stop the bleeding? If it be proposed, indeed, to make such a wound in the belly as will *admit two fingers or so,* and then to *tap the bag and draw it out,* so as to bring its root or peduncle *close to the wound of the belly,* that the surgeon may cut it without introducing his hand; *surely in a case otherwise so desperate it might be advisable to do it,* could we beforehand know that the circumstances would admit of such treatment." (Op. cit., p. 45.)

John Bell never performed ovariotomy; but an American (born in Virginia, practising in Kentucky), Dr.

Ephraim McDowell, who attended Bell's course of lectures in Edinburgh, in 1794, is said by his biographer, Dr. Gross, to have been "enraptured by the eloquence of his teacher, and the lessons which he imbibed were not lost upon him after his return to his native country. Mr. Bell is said to have dwelt with peculiar force and pathos upon the organic diseases of the ovaries, speaking of their hopeless character when left to themselves, and of the possibility, nay practicability, of removing them by operation. . . . . It is not improbable that the young Kentuckian, while listening to the teaching of the ardent and enthusiastic Scotchman, determined in his own mind to extirpate the ovaries in the first case that should present itself to him after his return to his native country. The subject had evidently made a strong impression upon him, and had frequently engaged his attention and reflection. He had thoroughly studied the relations of the pelvic viscera in their healthy and diseased conditions, and felt fully persuaded of the practicability of removing enlarged ovaries by a large incision through the wall of the abdomen." (Gross, 'Lives of eminent American Physicians and Surgeons,' pp. 209-212.)

Dr. McDowell returned to Kentucky in 1795, and commenced practice at once; but it was not until fourteen years afterwards that he was consulted, in 1809, by a Mrs. C—, who became the first subject of ovariotomy, and who survived in good health until 1841, and died after the completion of her seventy-eighth year.

It is quite certain that this is the first case of ovariotomy on record; for the operation of L'Aumonier, of Rouen, in 1776, which has been referred to as one of ovariotomy, was performed in a case of pelvic abscess, which he opened by an incision through the wall of the abdomen above Poupart's ligament, six or seven weeks after parturition. He seems also to have separated the fimbriæ of the Fallopian tube from the sac of the abscess, and to have removed the ovary without any necessity, and without any idea of ovariotomy. His case may be found recorded in the 'Mémoires de la

Société Royale de Médecine' for 1782. Another case, included in some of the tables of ovariotomy, by Professor Dzondi, is one in which a pelvic tumour was cured by drawing out a cyst through an incision in the abdominal wall of *a boy* twelve years old.

These are the only two cases which have been brought forward in opposition to Dr. McDowell's claim to have been the first to perform the operation of ovariotomy. His claim, therefore, is unquestionable. He followed up his first case by others. There is some uncertainty as to the precise number, but there is evidence to prove that between 1809 and 1820 he had seven cases, six of which were successful. In six subsequent cases he seems to have been less fortunate. He performed the operation thirteen times altogether, between 1809 and his death in 1830. The precise number of *deaths* cannot be ascertained, but of *eight cures* there can be no doubt. Dr. Gross does not give the exact date, but he says that Dr. McDowell was induced, by the debt of gratitude which he owed to John Bell, to draw up an outline of his cases, and to send a copy of his paper to the celebrated Scotchman, as "an exhibition of the exploits of his pupil in the execution of an operation, the practicability of which he had been at so much pains to teach in his lectures." (Op. cit., p. 216.)

Bell died before this paper arrived in Edinburgh, but it fell into the hands of Mr. Lizars, who published it seven years afterwards, in the thirty-second volume of the 'Edinburgh Medical and Surgical Journal.'

Suggested by William Hunter—advocated by John Bell—first practised by an American pupil of John Bell—Ovariotomy is an operation of British origin, and it is to the labour of British surgeons that its subsequent progress is chiefly due.

Mr. Lizars, of Edinburgh, was the first to attempt the operation in this country. In 1823 he laid open the abdomen of a woman, twenty-nine years of age, who was supposed by several eminent physicians to suffer from ovarian disease. But it was proved that the abdominal enlarge-

ment was due only to tympanites and obesity. Mr. Lizars published a full account of this case, and I have received information respecting it from two gentlemen who were present—Dr. Knox, and Dr. Boulton, of Horncastle. The chief interest of the case rests in the illustration it affords of the ignorance of physical diagnosis forty years ago. The patient recovered from the operation. In 1825, Mr. Lizars operated twice. The first case was considered to be successful, as one large ovarian tumour was removed, and the patient recovered; but the other ovary was found to be diseased, and was not disturbed on account of the adhesions. In the second case, a solid ovarian tumour, which weighed seven pounds, was removed; but death followed in fifty-six hours, from peritonitis. In the same year Mr. Lizars fell into another error of diagnosis, and opened the abdomen only to find a large uterine tumour; but the patient recovered, and lived twenty-five years afterwards.

The first attempt to perform ovariotomy in London was made by Dr. Granville, in 1827. He operated in two cases. In one the operation was abandoned on account of the extent of the adhesions; the woman recovered. In the other case a fibrous tumour of the uterus, weighing eight pounds, was removed; but the patient died on the third day.

The ill success of Mr. Lizars and Dr. Granville—who both operated by the long incision, Mr. Lizars laying open the abdomen from the sternum to the pubes, and Dr. Granville making incisions nine or ten inches long—brought discredit upon the operation; and it was not until 1836, nine years after Dr. Granville's failures, that a provincial surgeon, Mr. Jeaffreson, of Framlingham, acted upon the suggestion of William Hunter, and performed ovariotomy by the small incision for the first time in Great Britain. A bilocular cyst was removed through an opening only an inch and a half long. The patient was alive in 1859, was fifty-six years of age, and had given birth to one boy and three girls after the operation.

In the same year (1836), another provincial surgeon,

Mr. King, of Saxmundham, successfully removed an ovarian cyst through an incision only three inches long; and Mr. West, of Tonbridge, also had a successful case, the incision being only two inches long. In 1838 Mr. Crisp, of Harleston, in Suffolk, removed a multilocular cyst through an incision only one inch long. The patient lived fifteen years after the operation, and enjoyed good health.

In 1839 Mr. West, of Tonbridge, had a second successful case; a single cyst, which had contained twenty-four pints of fluid, having been removed by the short incision. Mr. West also had an unsuccessful case of completed ovariotomy, and one in which the adhesions prevented the completion of the operation. In the same year, 1839, the first attempt to perform ovariotomy of which I have been able to find any record in a London hospital, was made at Guy's, by Mr. Morgan; a small incision was made, adhesions were found, the tumour was not removed, and the patient died in forty-eight hours.

In 1840 Mr. Benjamin Phillips operated at the Marylebone Infirmary, and completed the operation for the first time in London; but the result was unsuccessful.

In 1842 Dr. Clay, of Manchester, commenced his long series of operations, performing ovariotomy four times, and in three out of the four with success. In 1843 he also operated four times, twice successfully. In 1843 Mr. Aston Key removed both ovaries from a patient in Guy's Hospital. His incision extended from the ensiform cartilage to the pubes, and death followed on the fourth day. Later in the same year, Mr. Bransby Cooper operated in the same hospital by the long incision, and removed a large multilocular cyst; but the patient died on the seventh day.

So that twenty years ago, although ovariotomy had been performed with very qualified success in one case in Scotland, and in at least ten cases with complete success by surgeons in our own provinces, it had never been performed successfully in London. It was the good fortune of Mr. Walne to perform the first successful operation in London in November, 1842; and he had two other successful cases in

May and September, 1843. In that year, and in 1844, Dr. Frederic Bird had three, and Mr. Lane two, successful cases. Mr. Lane's first patient is still alive, and has had five children. In 1843 and 1845, Mr. Southam, of Salford, and in 1845 Mr. Dickson, of Shrewsbury, published successful cases. In 1846 Mr. H. E. Burd had a case which is published in the thirtieth and thirty-second volumes of the 'Transactions' of this Society, the patient having recovered, and had a child two years after operation.

In the same year Mr. Solly assisted materially in the progress of ovariotomy, by pointing out one of the causes of danger, and the means of avoiding it; taking advantage of an unsuccessful case which occurred in his practice at St. Thomas's Hospital, to teach his pupils and professional brethren that retraction of the pedicle behind the ligature is very likely to occur, and to lead to fatal hæmorrhage, unless prevented by great care. His clinical lecture published in the 'Medical Gazette,' in 1846, contains a masterly review of the arguments for and against the operation, which must have had considerable effect upon the mind of the profession at the time.

The year 1846 is also noteworthy in the history of ovariotomy, as in that year Mr. Cæsar Hawkins performed the operation successfully in St. George's Hospital, this being the first successful operation by a surgeon of any of our metropolitan hospitals. But Mr. Hawkins did not repeat the operation, and his example was not followed by others, for several years; Dr. F. Bird and Mr. Lane being the only operators in London, except Dr. Protheroe Smith, who had a successful case, although Dr. Clay continued his operations at Manchester, and successful cases were recorded by Dr. Elkington, of Birmingham, and by Mr. Crouch in 1849, and by Mr. Cornish, of Taunton, and Mr. Day, of Walsall, in 1850.

In 1850 Mr. Duffin inaugurated a new era in ovariotomy, by pointing out the danger of leaving the tied end of the pedicle to decompose within the peritoneal cavity, and by insisting upon the importance of keeping the strangulated

stump outside. He acted up to this principle in a case which was published in the thirty-fourth volume of the 'Transactions' of this Society.

Up to the publication, in 1851, of that volume of the 'Transactions,' the papers on ovarian disease which had appeared in them must have had an influence decidedly unfavorable upon the progress of the operation in Great Britain. A paper by Mr. Benjamin Phillips, published in 1844, exhibited in a tabular form "the results of 81 operations performed for the purpose of extracting ovarian tumours. In 61 cases the tumour was extracted; in 15 cases, adhesions, or other circumstances, prevented its removal. Of the cases in which the operation was completed, the tumour being extracted, 35 terminated favorably; the patients recovered. In 26 instances the termination was unfavorable; the patients died." This result of only 35 cures out of 81 operations, was doubtless discouraging to the profession, although Mr. Phillips discussed the important question "whether the extraction of ovarian tumours shall be classed among the benefits conferred by science upon man," in the most calm and philosophical spirit, calculated to "moderate exaggerated expectations on the one hand, and exaggerated fears on the other." He showed that ovariotomy, though a grave and dangerous operation, was proved by the results to be far less so than ligature of the innominata, and other operations which had been at once admitted into practice; and he proved that the existence of adhesions had not so far lessened the proportion of recoveries as to become a bar to the performance of the operation, and that the short had led to better results that the long incision.

In 1850 Dr. Robert Lee also brought a table of cases of ovariotomy before this Society. It was published in 1851, in the same volume of the 'Transactions,' with Mr. Duffin's memorable case. According to Dr. Lee's table, of 162 cases in which the operation had been attempted or performed in Great Britain, "in 60, the ovarian disease could not be removed; 19 of these proved fatal. Of the

remaining 102 cases in which the operation was completed, 42 terminated fatally." Sixty cures out of 162 cases was felt to be a very unsuccessful result, and the profession were still further discouraged by repeated assertions, which were never satisfactorily answered, that some operators had not published all their fatal cases. The discussion which took place in this Society, on the 12th November, 1850, after Mr. Duffin's case and Dr. Lee's paper had been read, tended to throw great discredit upon the operation. Mr. Cæsar Hawkins asserted the prevalence of a belief that "many of the operations have been fatal, or have been impossible of completion, of which the public have no information." He stated that the operation had been attempted by ten surgeons attached to hospitals in London, that not one of these gentlemen had performed it twice, and that the only successful case of the ten was his own. He also drew from Dr. Frederic Bird the admission that, in addition to thirteen cases in which he had extirpated large ovarian tumours, in one case the tumour could not be removed, and in eighteen other cases he had made exploratory incisions; so that, although not one of these eighteen patients was injured by the incisions, there were only nine cures, or successful cases, out of thirty-two operations. The fact that such a result was possible in the practice of a man of great experience became a serious impediment to the progress of ovariotomy. It led to a common belief, not yet overcome, that we have no means of determining whether an ovarian tumour can or cannot be removed, without the prelude of an exploratory incision; and no one who reads the reports of that memorable discussion in the medical journals of the year can wonder that one of the oldest, ablest, and most experienced Fellows of the Society—Mr. Lawrence—assuming that "share of responsibility which high reputation imposes upon its possessor"—should have closed the debate by the question whether the attempts at treating diseased ovaries by surgical operation "can be encouraged and continued without danger to the character of the profession?"

Nor is it surprising that during the next seven years the operation was regarded very unfavorably by the profession. Dr. Clay continued to operate at Manchester; but as his cases were not brought before this or other influential societies, and as his operations were not performed in an hospital before numerous witnesses, his example had but a very limited influence,—while his adherence to the long incision maintained the dread with which the operation was regarded, both by the profession and the public, long after chloroform had done so much to lighten apprehension, to abolish pain, and to lessen shock. Here and there an occasional case was recorded; Mr. Beale, of Halesworth, had a successful case by the small incision a fortnight after the memorable debate in this Society; but Dr. Bird himself either ceased to operate or to report his cases. In 1852 Dr. Tanner had a successful case, and a second in 1853. In the same year (1853) Mr. Borlase Childs and Mr. Erichsen had each one successful case. In 1855, Mr. Garrard, of Halesworth, had another; and in 1857, Mr. Humphry, of Cambridge, and Mr. Hunt, of Ashton-under-Lyne, had each a successful case. Between his first case in 1852, and 1856, Mr. Baker Brown operated on nine patients; but his results were so disastrous, seven of the nine patients having died, that the operation fell into still greater disrepute; and when I returned from the East after the Crimean war, and resumed my duties as Surgeon of the Samaritan Hospital, ovariotomy was at a very low ebb in the opinion of the profession. We had been told in our most influential review, that the operation was one which "though it may excite the astonishment of the vulgar, calls neither for the knowledge of the anatomist nor the skill of the surgeon," and that whenever an operation was performed "so fearful in its nature, often so immediately fatal in its results, a fundamental principle of medical morality is outraged." In some of the most recent surgical works the operation was not even alluded to. In the best works on the diseases of women it was condemned. No successful case had occurred in Scotland since Mr. Lizars' partial success in

1825. The operation had never been performed in Ireland. In London, Mr. Walne, Mr. Lane, and Dr. F. Bird had either ceased to operate or to publish their cases; Mr. Baker Brown had not operated for more than two years; and Mr. Cæsar Hawkins' was still, after twelve years, the only successful operation which had been performed in any of our large metropolitan hospitals.

Several cases of ovarian disease fell under my notice in 1857, and I became strongly impressed by the inutility of palliative treatment, by the miserable end of some patients who died worn out by the ordinary progress of the disease, and by the danger of iodine injections. This led me, in December, 1857, after carefully considering the evidence adduced for and against ovariotomy, to put the operation to the test of personal experience, pledging myself to make the results fully known to the profession. My first attempt was not encouraging. Finding intestines in front of the tumour, I was induced to close the wound without proceeding further, on the representation that the tumour could not be ovarian. The patient recovered well, but died four months afterwards from spontaneous rupture of a cyst into the peritoneal cavity, and I had the mortification to find that the tumour might have been easily removed.

The three following cases were successful; the first was in February, 1858. The tumour was exhibited at the Pathological Society; the case was fully reported in the 'Medical Times;' and more than one writer has traced to that case the commencement of what has been termed on the continent the "revival of ovariotomy in England." My fifth case, or fourth case of completed ovariotomy, was fatal. These five cases formed the subject of a paper which was read before this Society in February, 1859. As it does not appear in the 'Transactions,' and as a short abstract only appears in the 'Proceedings,' I may state here that I entered very fully into the question as to the principle of the operation, in the hope of eliciting the opinion and counsel of some of the most influential and experienced Fellows of the Society; and I also discussed minutely the

causes of the mortality, and the means by which we might hope to reduce it, insisting especially—

That the incision should not be needlessly long.

That the peritoneal cavity should be kept free from ovarian fluid.

That the cyst should not be cut away so near the ligature on the pedicle as to permit of the ligature slipping.

That the strangulated end of the pedicle should be kept outside the abdominal cavity.

That in uniting the wound two opposed surfaces of perineum should be fastened together.

That opium had been used much too freely in the after treatment. And lastly,

That pure air, perfect cleanliness, complete quiet, and the undivided attention of a nurse—all conditions unattainable in the general wards of a large hospital—are conditions necessary to success.

Mr. Hutchinson was the first to follow up ovariotomy in 1858. He had two successful cases in that year; and he assisted very materially in the progress of the operation by making his cases well known, and by the introduction of the clamp as a ready means of securing the pedicle and fixing it on the abdominal wall. Mr. Baker Brown, after an interval of more than four years since his second and last successful case, recommenced operating, and had two successful cases in 1858, and two in 1859; but six fatal cases in the practice of the same operator in 1859, somewhat retarded the progress of ovariotomy in the favorable opinion of the profession.

In order to give the fullest opportunity for scrutinising the details of every case, I brought every tumour which I removed before the Pathological Society; and I afforded the hospital reporters of the various medical journals every facility for obtaining notes of the cases. I also invited many of the most distinguished practitioners of the day to witness the operations, and to see the patients afterwards, both in hospital and private practice. Among those who

accepted the invitations were—Messrs. Nélaton and Démarquay, of Paris; Schuh, of Vienna; Porta, of Pavia; Vanzetti, of Padua; De Toca, of Madrid; Gurlt, of Berlin; Koepl, of Brussels; Marion Sims, of New York; Simpson, of Edinburgh; Pirrie, of Aberdeen; Gordon, of Dublin; Buchanan and Macleod, of Glasgow; Clay, of Birmingham; Bickersteth and Grimsdale, of Liverpool; Roberton, Roberts, and Whitehead, of Manchester; Hey, of Leeds; as well as Messrs. Fergusson, Paget, Bowman, Curling, Adams, Holden, Hulke; and Drs. West, Priestley, Tyler Smith, Robert Lee, and very many other professional friends of this and other countries. By this course I tried to induce the most influential men among us to examine the question for themselves; and I believe a great deal of the feeling against the operation was removed. I know that many gentlemen who came as spectators, having previously strongly objected to the operation, have since performed it successfully.

I brought the subject again before this Society in 1859, when three cases of tetanus occurred in my practice within one month, two of them after ovariotomy. A considerable portion of that paper may be found in the 'Proceedings' for the session 1859-1860.

It appears to be unnecessary to trace the progress of ovariotomy during the last three years, as in 1860 Mr. Clay, of Birmingham, published as an appendix to his translation of Kiwisch 'On the Diseases of the Ovaries,' fuller and more accurate statistical information as to the results of ovariotomy than exist in any language respecting any surgical operation. This work had a marked influence in hastening the progress of ovariotomy in Great Britain; and since its publication the operation has been repeatedly performed, and with a very encouraging amount of success, in London, Liverpool, Leeds, Birmingham, and Manchester; while within the present year successful cases have been met with in three of the large general hospitals of this metropolis—the London, Guy's, and the Middlesex. It has not yet been done successfully in Ireland; but two successful cases have been done in Scotland.

I do not now refer to the conclusions which Mr. Clay deduces from his careful and elaborate researches, because the oft-repeated objection may be raised that some operators have not made known all their unsuccessful cases. But, as 50 cases of one operation in the hands of one operator seem to afford a tolerably fair test of the success of the proceeding, I have arranged in a table the result of my whole experience, classing the cases in three series—

I. Of 50 cases in which the operation was completed.

II. Of 3 cases in which it was commenced but not completed. And

III. Of 3 cases in which a small incision was made in aid of diagnosis, or as an auxiliary to tapping.

Table of Cases of Ovariotomy in Great Britain.

SERIES I.—In which Ovariotomy was completed—50 cases: 33 recoveries; 17 deaths.
II. „ „ was commenced, but not completed—3 cases. No death from the operation.
III. „ an exploratory incision was made in aid of diagnosis—3 cases. 1 death.

SERIES I.—*Fifty Cases in which Ovariotomy was completed.*

No.	Date.	Age.	Condition.	History, &c.	Result.
1	1858. Feb.	29	Unmarried	Had been tapped seven times and injected with iodine twice. Multilocular, 26 lbs.	Remains quite well.
2	Aug.	38	Married	Had been tapped three times. Multilocular cyst, 31 lbs.	Remains quite well.
3	Nov.	33	Married	Never tapped. 57 lbs. of ascitic fluid removed. 23 lbs. pseudo-colloid ovarian tumour	Recovered, and remained well for some months, but died ten months afterwards of cancer of peritoneum.
4	1859. Jan.	39	Unmarried	Pseudo-colloid tumour, 10½ lbs.	Died thirty-two hours after operation.
5	May	43	Married	Pseudo-colloid tumour, 10 lbs., surrounded by six gallons of ascitic fluid	Remains well.
6	June	29	Married	Fibrous and cystic tumour, 7½ lbs., surrounded by ascitic fluid	Died on second day.
7	June	29	Unmarried	Tapped twice. Multilocular	Recovered.
8	July	47	Married	Often tapped. Both ovaries removed	Recovered, and remained well two years, and then died of hemiplegia.

No.	Date.	Age.	Condition.	History, &c.	Result.
9	1859. Oct.	41	Married	Tapped twice. Multilocular cyst, 38 lbs.	Remains well. Had a child thirteen months after operation.
10	Oct.	37	Unmarried	Multilocular cyst, 19 lbs.	Died on the fourth day.
11	Oct.	29	Unmarried	Multilocular, 42 lbs.	Remains well.
12	Oct.	38	Married	Tapped twice. Multilocular, 53 lbs.	Died, on the ninth day, of tetanus.
13	Nov.	17	Unmarried	Tapped eight times. Multilocular, 38 lbs.	Remains well.
14	Dec.	27	Unmarried	Tapped nine times. Multilocular, 54 lbs.	Died twenty-three hours after.
15	1860. Jan.	23	Unmarried	Tapped twice. Multilocular, 25 lbs.	Remains well.
16	Feb.	26	Married	Tapped twice. Multilocular, about 25 lbs.	Died thirty hours after.
17	Feb.	33	Married	Tapped five times. Multilocular, 31 lbs.	Died, forty-six hours after, of intestinal obstruction by pedicle.
18	July	41	Married	Multilocular cyst, about 26 lbs.	Remains well.
19	July	36	Unmarried	Multilocular, about 24 lbs.	Remains well.
20	Oct.	53	Married	Very large multilocular, more than 50 lbs.	Remains well.
21	1861. Jan.	54	Married	Multilocular, about 20 lbs.	Remains well.
22	March	22	Unmarried	About 16 lbs., multilocular	Remains well.
23	April	55	Married	Semi-solid, about 20 lbs.	Remains well.
24	April	42	Married	Very large multilocular cyst	Died twenty-four hours after.
25	June	34	Unmarried	Multilocular, 55 lbs.	Died four days after.
26	July	31	Married	Multilocular, more than 50 lbs.	Died two days after.
27	Aug.	27	Unmarried	Nearly single cyst. 44 lbs., of fluid	Remains well.
28	Aug.	35	Unmarried	Tapped twice. Multilocular, about 17 lbs.	Remains well.
29	Oct.	54	Married	Ascitic fluid round large colloid cyst, about 35 lbs.	Died forty-seven hours after.
30	Dec.	50	Unmarried	Tapped nine times. Multilocular, 40 lbs.	Remains well.
31	Dec.	46	Married	Fibrous tumour, 27 lbs.	Died twelve days after.
32	1862. Jan.	30	Unmarried	Multilocular	Died thirty hours after.
33	Jan.	47	Married	Multilocular, about 30 lbs.	Died fifth day.
34	Jan.	32	Married	Multilocular, very large	Died third day.
35	May	30	Unmarried	Multilocular	Died, thirteenth day, of tetanus.

36	1862. May	41	Married	Very large multilocular	Remains well.
37	June	35	Married	Large semi-solid tumour	Remains well.
38	June	28	Unmarried	Multilocular. Had been injected with iodine	Remains well.
39	June	25	Married	Large multilocular	Remains well.
40	July	20	Unmarried	Over 40 lbs., multilocular	Remains well.
41	July	41	Unmarried	Large semi-solid tumour	Remains well.
42	Sept.	49	Unmarried	Adenoid tumour	Remains well.
43	Oct.	24	Unmarried	Very small cyst, 7 lbs.	Remains well.
44	Oct.	56	Married	Large multilocular	Remains well.
45	Oct.	43	Unmarried	Large semi-solid	Died forty hours after.
46	Nov.	32	Unmarried	Cystic and adenoid	Recovered.
47	Nov.	23	Unmarried	Multilocular cyst	Convalescent.
48	Nov.	50	Married	Large multilocular	Convalescent.
49	Nov.	23	Unmarried	Large multilocular	Convalescent.
50	Nov.	17	Unmarried	Large multilocular	Convalescent.

SERIES II.—*Three Cases in which Ovariotomy was commenced, but not completed.*

No.	Date.	Age.	Condition.	History, &c.	Result.
1	1857. Dec.	28	Unmarried	Incision made, and intestines found anterior to tumour	Recovered from incision, and died 4 months after from spontaneous rupture of cyst into peritoneal cavity.
2	1860. Oct.	21	Unmarried	Abandoned, from extent and closeness of parietal adhesions	Recovered, and was tapped seven times afterwards; she died, a year after.
3	1862. Oct.	46	Married	Abandoned from connections around brim of pelvis and to uterus and bladder	Partially recovered, but died three weeks afterwards of rupture of a cyst into peritoneal cavity.

SERIES III.—*Three Cases in which an Exploratory Incision was made.*

No.	Date.	Age.	Condition.	History, &c.	Result.
1	1860. Sept.	38	Married	Found the extensive attachments suspected, and simply tapped	More relieved than by tapping, but died of natural progress of disease after 15 days.
2	1861 Oct.	30	Unmarried	Found the close attachments to bladder which had been suspected before the incision was made	Recovered; has been tapped twice since.
3	1862. Feb.	37	Married	Found very firm parietal adhesions, as suspected. Tapped several cysts	Died a week afterwards from inflammation of lining membrane of cyst.

I have not included in this table one case in which great doubt was felt before the operation whether the moveable solid tumour recognised was ovarian, or a fibrous outgrowth from the uterus, and which proved to be the latter, because I was able to remove the tumour as I anticipated; and I hope, on some future occasion, to bring this and other cases of uterine tumour before the Society. But as this was the only case out of fifty-seven in which I opened the abdomen in any other than an ovarian tumour, it is evident that objections to the operation, founded upon imaginary difficulties of diagnosis, cannot any longer be seriously entertained. If, indeed, it were possible that a skilful surgeon could open the abdomen with the intention of removing an ovarian tumour—or in the belief that an ovarian tumour was present, after careful examination of a patient—and yet in one in ten, or one in fifteen cases, no such tumour existed, I should at once confess that this was a very strong argument against admitting the principle of the operation. But as no such mistake was made in any one of the cases now before the Society, nor in any one of the numerous cases in which I have simply tapped, or have injected iodine, it must be considered as sufficiently proved that the alleged difficulty of diagnosis is greatly exaggerated.

Another error, which, if uncorrected, would retard the progress of the operation, is a belief that it is one of so very grave a nature, and so uncertain in its results, that no surgeon can do more than make a rough guess at the probable issue in any given case. Because a very favorable case has sometimes terminated unfavorably, while a very desperate one has occasionally succeeded, it has not only been argued that the rules which guide us in estimating the risk of other serious operations do not apply in the case of ovariotomy; but it has been gravely maintained that this operation stands alone, and that the more the general health of the patient has been broken down by the disease, the more the peritoneum has been changed from its normal state by distension and adhesions, the greater is the probability of success. This pernicious error, which has led to

many promising cases being deferred until too late, or until what would have been a very simple operation has become a very complicated and difficult one, I am most anxious to correct. On looking over the above table, I am reminded of some very hopeless cases of large tumours, with firm adhesions, which I removed successfully from women who were very much broken down by the disease; and I see one case which was in every respect most favorable, but in which death occurred from tetanus. I see another which was fatal, but which, in all probability, would have been successful, had I known at the time of the operation all that I have since learned and endeavoured to teach, as to the mode of securing the pedicle, of closing the wound, and of restricting the use of opium. But classing cases of this kind among those exceptional occurrences which every surgeon who has much experience of capital operations occasionally meets with, and accepts as lessons to be cautious in prognosis, when so many unforeseen circumstances may arise to disturb the most careful calculations, I can state most distinctly that ovariotomy does not differ from other serious operations with regard to the rule that the better the general health of the patient, and the smaller the injury that is done in the removal of any diseased part, the greater is the probability of success.

Then as to the condition in which a patient is placed before and after operation, it is to be observed that when I began to perform ovariotomy it was held that a patient should undergo a long course of preparatory treatment, and that during and after the operation she should be kept in a close room filled with hot vapour. A state of copious perspiration was encouraged, and opium was given in such large and frequent doses, that some patients who died were not killed by ovariotomy, but were poisoned by opium. In my earlier cases, I followed the traditional routine; but I soon found that in some cases no opium need be given, and that when it was wanted to relieve pain, very moderate doses, repeated according to the continuance or recurrence of pain, were quite sufficient. Brandy, wine, and strong

beef-tea were also given from the first by some operators, while one kept his patients on the most meagre diet. I avoided both extremes, finding that in most cases little or no stimulus was needed during the first two or three days, and that the patients did much better on barley-water, gruel, or arrowroot, the quantity being regulated entirely by the appetite; animal food not being given until the fourth or fifth day, and stimulants being administered or not in accordance with the state of the pulse and the general condition of the patient. I also found that the sickness and faintness which were supposed to be the proofs that large quantities of stimulants are required, depended in a great measure on the practice of keeping the patients in an atmosphere artificially heated and moistened, and that when the room was kept warm by a large open fire, and fresh air was admitted freely by an open window—the patients being protected from currents of cold air by a screen and a full supply of bed-clothes—the condition after the operation differed from the healthy state much less than under the former plan of treatment. I have known patients declare that the night after the operation was the best they had had for weeks, and some have recovered without taking a single dose of any sort of medicine. It may be seen that of my last fifteen cases, fourteen have recovered or are convalescent. I attribute this increasing success to the fact that in all these cases, even in winter, a window has been kept open night and day (except when the patient was uncovered for dressing), while the room has been warmed by an open fire kept constantly burning.

I have trespassed so long upon the attention of the Society that I cannot at present enter upon the consideration of the mode of performing the operation, the instruments found most useful, or the best mode of meeting the various difficulties which may embarrass the surgeon in complicated cases. And these are all matters of detail, well deserving of careful study it is true, but still of far inferior importance to the question whether the principle of the operation is to be acknowledged by this Society. I shall, therefore, con-

clude by referring to the condition of the patients who have recovered as a proof that when they escape the immediate dangers of the operation, their health becomes remarkably good.

It may be seen by reference to the table that one patient who recovered died ten months afterwards of cancer of the peritoneum, and one two years afterwards of hemiplegia; but all the others have maintained a condition of vigorous health. Last May, M. Nélaton saw several patients upon whom I had operated in 1859, 1860, and 1861. He examined them very carefully, and was very deeply impressed by the perfect health they enjoyed. Menstruation has returned in many cases with perfect regularity, and one patient bore a healthy child afterwards. As many of these women, now young and healthy, who are fulfilling their various duties in domestic service, or in the home life of single ladies, or as wives and mothers, and who are likely to continue to do so for many years, would in all probability have died a miserable death, months or years ago, had not their lives been saved by ovariotomy—it is for the Fellows of this Society to determine whether an operation which has led to such results is still to be stigmatised as unjustifiable —whether they who perform it are necessarily open to the reproach that they do so rather for their own selfish purposes than for the good of their patients—whether they who, in the face of evidence sufficient to convince any unprejudiced mind, continue to withhold from their patients a tried and approved means of curing a disease otherwise incurable and certainly fatal, are not open to a still more serious reproach —whether it does not become us (as men of science who practice our art not for our own advantage only, but with the earnest desire to do the very best that can be done for those who are confided to our care, or who trust in our knowledge, our skill, and our honour) no longer to oppose or condemn this operation, but rather to study its past history—to regard it with pride, as an offspring of British genius, cultivated by British industry—and to aid its future progress by perfecting our means of diagnosis; by ascertaining the con-

ditions which should in any case encourage us to recommend the operation, or should deter us from doing so; and by investigating the avoidable or removable causes of excessive mortality, reduce it to that comparatively low proportion to which I feel confident it may be and will be reduced, and thus render ovariotomy in each coming year more honorable to British Surgery, and more useful to Mankind.

CASE

OF

WHITE FIBRO-SEROUS DISCHARGE FROM THE THIGH.

BY

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The following remarkable case appears to me to be worthy of careful record, both on account of the great rarity of such an affection, and from the light that it seems to throw on the pathological nature of so-called *chylous* or *chylo-serous* discharges in general.

I. *Report of case.*

June 12th, 1862.—Mrs. K—, æt. 46, a woman in humble but comfortable circumstances, somewhat pale, but neither unhealthy-looking nor emaciated, applied to me for some strengthening medicine to counteract a general debility induced by an excessive discharge from the inner and posterior aspect of the left thigh. She had consulted many doctors, who vainly endeavoured to combat the symptoms by the administration of internal remedies; and had long ago abandoned all hope of getting rid of the trouble itself.

The discharge, when I first saw it, was white, like milk, and flowed from a semi-excoriated surface of the size of the palm of the hand, in the situation just described; and partly also from broken vesicles in the neighbourhood of this patch, which was nowhere sharply defined from the surrounding healthy skin. The central patch was congested, of a deep red colour when the patient was standing, and when the varicose veins of the limb beneath were distended with blood; while, when she was lying prone, the colour was paler, though still indicative of a great amount of local hyperæmia. The patch, moreover, stood out irregularly in relief, exactly like the raised map of a mountainous district; and pressure with the finger, while it momentarily dispelled the redness, left in its place a yellowish mark, such as is produced by considerable serous infiltration in the deeper epidermic layers. This area was thickly covered with vesicles, from the size of a pin's head upwards; some of them being even as large as those met with in herpes zoster. The same were also visible in some numbers on the surrounding skin, even where it was no longer either infiltrated or congested; they were, however, both smaller and more sparsely disseminated the further they lay from the centre. The white contents shone clearly through the thin epidermic pellicle that confined them, imparting to the vesicles the appearance of pearly drops of fluid, so that one was at first surprised at finding they could not be wiped away with the finger. Some vesicles were entire and perfectly dry on the surface; but from the excoriations resulting from their rupture, even when they were simply opened with the point of a lancet, a thin constant stream of milky fluid oozed forth and ran down the leg. This discharge was considerably affected by the position of the patient. It continued to flow for a long while from an excoriated point even when she was lying on her face; but it was both more copious and more persistent when she was erect and moving about. About an hour after she retired to rest it commonly ceased to run, so that the leg in the morning was quite dry, though still much infiltrated, slightly congested, and covered

over with unbroken vesicles, as well as with a desquamation from the excoriated surfaces of the day before. The flux recommenced about an hour after the patient rose in the morning, and increased in profusion as the day wore on, especially if she had to stand or walk much, or if there was much moisture in the air. In the after part of the day her garments were usually drenched, even through the cloths which were applied to protect them; and, on placing a basin underneath the thigh to receive the fluid that ran from it, somewhat over five ounces were collected in the course of an hour; even though the position, the patient being seated and the limb partially extended, was not the most favorable to promote an abundant flow. I believe that *ten ounces* would more nearly represent the quantity secreted when the patient was moving about. Frequently, when enfeebled by the long continuance or abundance of the discharge, she was obliged to keep to bed a day or two, and thereby recovered her strength. On again rising, after perhaps two or three days, an intolerable itching of the affected surface would supervene, inducing her to rupture the distended vesicles by scratching, on which the flux would commence afresh. In wet weather this interval of health was always very brief; but in dry or frosty weather it might last for a fortnight or even three weeks at a time. The affected thigh was considerably swollen; its girth, at the meeting of the upper and middle thirds, being as much as nineteen inches, while the opposite limb only measured sixteen inches at the same point. So far as I could judge, the swelling was not circumscribed, as it seems to have been, from her own account, at an earlier period. The varicose condition of the superficial veins of the limb generally, which was most marked in the long saphenous, and in its tributaries above and below the knee-joint, evidently offered great obstruction to the return of blood from the thigh.

Neither the inguinal nor any other lymphatic glands within reach were enlarged; and I could not ascertain that the food of the patient made any difference in the quantity

or quality of the secretion. The urine, which I tested for urea and uric acid, was perfectly limpid and normal, with a sp. gr. of 1016. According to the patient's account it was somewhat less abundant when the discharge from the thigh was flowing profusely. She also volunteered the statement that her skin was always dry; and that no amount of heat or exercise ever induced perspiration; a peculiarity to which the attention of herself and her companions had often been directed when she was a girl. I introduce this statement, along with some others, without meaning necessarily to attach any importance to it; but simply to give, in this part of my paper, as faithful and complete an account of all the symptoms as possible.

The patient, who is a married woman, and mother of six healthy children, gives the following account of her malady. Twenty-one years ago, three or four months after her second confinement, she remembers having been seized with a shivering fit, though unattended with pain or other observed symptoms at the time; but shortly afterwards she noticed, quite accidentally as she states, that "a lump" had formed on the back of her left thigh. The swelling was attended with no uneasiness, but it did not subside until the period of her third pregnancy, when it went away, or at least diminished for several months; again reappearing, however, after another shivering fit, about a fortnight subsequent to delivery. Every year, for the last twenty years, she has also suffered from at least one attack of inflammation (phlebitis?) in the affected limb; ushered in, like the simple swelling, by a shivering fit, and generally coming on in early summer. In some years lately she has had two, or even three such accidents. About fifteen years ago, between her third and fourth pregnancies, a few vesicles made their appearance, after an inflammation of this kind, somewhere near the centre of the "lump," or of the area now occupied by the eruption. The surface at this point was itchy, and a *brownish fluid* exuded from the vesicles on scratching, which continued to be secreted at remote intervals, and in small quantities, for about a year. It would run, she says,

for three or four days at a time; and thereafter be dried up for as long as one or two months. Another inflammation having supervened, the area occupied by the vesicles extended; when the discharge became more profuse and frequent, and also *whitish* in colour, though not absolutely milk-like. The discharge then continued, with much the same characters, for about eight years; the affected surface, however, constantly gaining in size on each repetition of the inflammatory attack. During this period, the patient's three youngest children, the youngest now thirteen, were born. It is remarkable that both the swelling and discharge disappeared entirely while the patient was pregnant, to be re-established almost immediately after the birth of her child, although the flux, while she was suckling it, was never very copious nor long continued. As a rule, also, the symptoms during the winter months were not troublesome; and in frosty weather she was always perfectly well.

Till about five or six years ago, the surface on which the vesicles were developed had the aspect of healthy skin; but at this date a small congested and elevated patch, slowly extending peripherically, for the first time made its appearance. During the last six years she has noticed a constant gradual encroachment of the malady; both of the congested central patch and of the surrounding vesicles, some of which now extend below the middle of the lower third of the thigh. She also records, as new symptoms of this period, the assumption by the discharge of a perfectly milk-white colour, and much shortening of the intervals during which she used to be free from it. The discharge has also been more copious, and the effects of it on her general health more severely felt. She states that while the discharge is going on, and particularly when she feels from the swelling of the thigh, itching of the surface, &c., that it is about to commence, she usually experiences a sensation of cold and numbness in the affected limb. Her menstrual periods still recur with regularity; but have never appeared to her to modify her complaint, nor to be influenced by it in profusion or otherwise.

July 5th.—I paid a visit to the patient in her own house. I found her much exhausted; the weather being wet, and the discharge having been flowing abundantly for several days. She was seated on a chair, with her feet on another; and the floor below her looked as if a large bowl of milk had been newly spilled on it.

Early on the morning of July 6th, the patient was seized suddenly with a violent shivering fit, which lasted for several hours. The left inguinal region became considerably swelled, and constant lancinating pains shot from it towards the knee. The skin during the day was hot and dry. During the night an eruption of erythematous patches came out all round the knee, which, on July 7th, were brightly conspicuous on the lower surface of the thigh, especially in front and to the outside, and on the upper third of the leg. The discharge had become dried up, as it invariably did when the patient took to bed; but the veins were much distended, and the course of the saphena magna, as well as several other congested points, were tender to the touch. The skin remained very hot; but in the course of the afternoon a gentle perspiration set in, for the first time, as the patient has again and again assured me, in the course of her life. She describes it as having been a perfectly novel sensation to her. She gradually recovered in about ten days; the only medicine ordered, with the exception of a saline purge, having been half an ounce of an acidulated bitter infusion twice daily.

I shall now very briefly record the further progress and treatment of the case.

28th.—After an absence of twenty-two days, the discharge was again re-established. Ordered—℞ Tinct. Muriat. Ferri, Ac. Nitr. dil. utr. ℥j; a drachm in half a tumbler of water morning and evening. Next morning the surface was quite dry, and no more moisture flowed from it for a week, during which interval patient declared that she felt stronger and walked about more than she had done for years.

Aug. 4th.—The skin, after the lapse of a week, was still

dry, but numerous distended vesicles were disseminated over it, some of which I observed were within a shorter distance of the knee than before the inflammatory attack, indicating a continued extension of the affection downwards. On rupturing one of these, a large drop of milky fluid escaped, and a thin stream continued to run from the excoriated point for some five or ten minutes, till I stopped it with a compress. The following morning the discharge was again copious, and continued to flow abundantly during the next three days. The use of the iron and acid was still persevered with; so that its first good effects were probably merely on the general health of the patient, by strengthening the digestive and nervous functions impaired by the shock of the inflammatory attack.

7th.—Discharge abundant. Ordered to apply to the affected surface, under a compress, a powder composed of equal parts of oxide of zinc and tannic acid; and over this to wear, during the day, an accurately fitting elastic stocking reaching to the top of the thigh. The use of the stocking, which had been previously prepared, was commenced on the morning of the 8th; but the dry powder and compress were soon discontinued, no moisture making its appearance while the stocking was being worn.

17th.—No return. Health of patient excellent. The appearance of the affected surface much changed; only a few crusts and squamæ, with one or two minute vesicles, being now scattered over a nearly level skin on the site of the previously infiltrated patches. Ordered to omit the use of the elastic stocking.

Sept. 1st.—Patient called to show that the vesicles were now again both numerous and distended, though the elevated patches had as yet only partially reappeared. The weather was fine, and she had been taking much exercise in the open air; but confidently anticipated that the first wet day would bring back the discharge as before. Her expectations were realised the very next day (September 2nd), which was wet; the flow recommencing gradually in the afternoon, and on the day following being again extremely copious.

I did not interfere for a day or two, and had a specimen of the discharge analysed.

9th.—Patient recommenced wearing the elastic stocking during the day.

October 30th.—There has never been any return of the discharge. The patient's health has never been better; the only peculiar symptoms she has observed being a sensation of fulness and tension, and a slight œdematous swelling of the mammæ on wet days, which produced some little inconvenience for about a month, but which has latterly almost ceased to recur. She has menstruated twice as usual. She expresses herself surprised to find that on taking exercise, or getting warm in bed, her skin becomes now frequently moist with perspiration. On the affected surface there is still an insignificant pityriasis, but no infiltrated patches or vesicles.

November 13th.—Patient returned to-day to show me that the discharge, after an interval of about two months, had again recommenced. It seems that, about a week before, she had been forced to discontinue the use of the elastic stocking during the day, owing to severe lancinating pains in the affected limb, coupled with tension and swelling of the breasts extending upwards towards the axillæ, in which, however, I failed to detect the slightest enlargement of the lymphatic glands. The discharge on this first day of its reappearance was rather serous, or opalescent, than milky.

14th.—Next morning the discharge commenced as usual, and had regained its usual milk-white aspect. The patient eat nothing all morning, but about noon partook of two fat ham sandwiches thickly spread with butter, and drank a tumbler of milk. I examined the fluid after three hours, but no difference was perceptible in its physical appearance; and both the morning and afternoon specimens threw to the surface, on standing for an hour or two, an equally abundant creamy layer. Patient feels confident that she will for the future be able to control the discharge, so long as her constitutional symptoms do not intervene to prevent

the stocking being worn. She was ordered to resume it next day, with the powder of oxide of zinc and tannic acid, if required.

20th.—Has been much troubled for some days past with swelling of the mammæ, on which account she only wore the stocking one day since the last report, for fear of a metastasis of her malady to a more inconvenient situation. This forenoon her attention was directed to a feeling of moisture on the surface of the breasts; and she came to me, in some alarm, to point out that drops of milky fluid could be squeezed from both nipples, but in greater abundance from the left. The fluid, on being squeezed out, resembled thick, brownish-yellow pus, and exhibited, when examined with the microscope, multitudes of minute oil-globules, with a few well-marked colostrum-corpuscles.

December 18th.—Patient much the same as at date of last report. Use of elastic stocking not resumed. The discharge not been troublesome, but usually flows a little on the afternoons of rainy days. Numerous vesicles, some of large size, on the posterior surface of the affected limb, which is for the time dry. Breasts still somewhat full, but no fluid comes from them spontaneously.

II. *Characters of discharge.*

With regard to the physical appearance of the discharge, it is sometimes more milk-like, sometimes more serous and opalescent. When it first begins to flow after a period of repose, it is never so white as when it has been running in some quantity for several days. Its colour, and even its smell, are then absolutely indistinguishable from those of pure new milk. I gave a small portion to a cat, which commenced greedily to lick it up, but suddenly stopped short after having fairly tasted it. A little while after being passed it coagulates throughout, the amount and aspect of the coagulum being much the same whatever be the characters of the fluid for the time. The coagulum

consists essentially of an extremely delicate network of fibrin, enclosing the milky molecules in its meshes. It is broken down on the least agitation, leaving a comparatively slight filamentous residuum. The specific gravity of several perfectly milky specimens ranged from 1011 to 1015.

Microscopical examination at once put an end to any notion of the fluid being milk. Numerous cells and nuclei were entangled in the fibrinous clot, with one or two oil-globules; and a very few elements quite similar to these remained floating in the surrounding fluid (see Fig. 2). The cells, which closely resembled white blood-cells, were nucleated, with granular contents, and with a diameter ranging from $\frac{1}{2000}''$ to $\frac{1}{4000}''$. The cells varied in comparative size much more than the nuclei, the diameter of which—about $\frac{1}{3000}''$—was pretty constant. They became more distinct on the addition of acetic acid, and some of them appeared to be free. The oil-globules were not numerous; but one or two of large size occurred now and then, both in the clot and floating in the fluid. There was also a "molecular basis," not unlike that met with in chyle, extremely difficult to distinguish when the fluid was merely opalescent, but when it was milky perfectly distinct throughout. The molecules were not the result of standing, being visible in specimens when quite fresh, and evidently determining the colour of the exudation. They exhibited very lively Brunonian movements, which were arrested on the addition of a drop of sulphuric ether, when they ran into oily globules.

With regard to chemical characters, the fluid remaining after its fibrin was deposited was perfectly neutral in reaction to litmus and turmeric. An abundant coagulum formed on heating, and on adding hydrochloric acid, but none on adding acetic acid. The *creamy layer*, described as rising to the surface, was white, without even a tinge of yellow, and in a two-ounce phial, after twelve hours' repose, about $\frac{1}{4}''$ in thickness. It consisted of an aggregation of the molecules permeating the whole liquid, densely packed together, and engaged in molecular movements. Oily globules were formed on addition of ether, which could be

seen slowly extending themselves at the expense of the granules round them; and when a drop was added to a little ether in a test-tube, it was wholly dissolved. I tested for *milk-sugar*, with every precaution, but found no trace of it. I owe the following analysis of a pure milky specimen to the kindness of Professor Anderson. Opposite are placed some results of an analysis by Dr. Beale, of a case of "chylous urine"—white fibro-serous discharge from the kidneys—which, as will presently appear, I am inclined to regard as the same disease in another situation.

	Discharge from the skin.	Discharge from the kidneys.
Solid matter . . .	5·43	5·26
Water . . .	94·57	94·74
Fatty matters . .	·71	1·39
Albumen . . .	2·88	1·3
Other organic matters . .	·6	1·94
Ash . . .	1·24	·63
	100·00	100·00

III. *Cases of the same affection.*

So far as I can ascertain, chronic white fibro-serous discharges from the cutaneous surface are extremely rare; indeed, I can only find three examples on record as occurring in temperate latitudes, a summary of which cannot, therefore, be without interest, for the sake of comparison with the present case.

1. The first case, "De lactis e femore fluxu," occurred in a male subject, in Germany, during the seventeenth century, and is recorded at considerable length by Dr. L. Sigismund Grass[1]. The following are the principal features of his description.—"'Monstra dari in medicina monstrat monstrosissimus affectus qui sequitur.' A working-man, forty-nine years of age, was seized in the autumn of 1669 with an

[1] 'Ephemerides Germaniæ,' decur. i, ann. ix et x, Vratislaviæ et Bregæ, 1860.

erysipelatous attack (phlebitis?). It left behind, on subsiding, a quasi-œdematous tumour of the thigh, occupied, in the first instance, by three red, prominent tubercles (*exanthematibus*: probably equivalent to what I have described in my own case as 'infiltrated patches'). One night, some time afterwards, while the patient was sleeping, after having undergone the fatigue of a journey, the uppermost of these tubercles, that nearest the groin, gave way with so copious a discharge that, on waking, he thought he had wet the bed, contrary to his wont; while feeling, nevertheless, a desire to empty his bladder. He soon found out, however, that the discharge was not urinary, but milky; and that the swelling of the thigh had somewhat abated, with a decided sense of relief. For nine years afterwards he was subject to accidents of the same kind. The thigh was not only the seat of a constant swelling, with frequent eruption of tubercles, but was attacked from time to time by an erysipelas, attended with shivering and yawning, and recurring at almost monthly periods. The swelling was, however, diminished in the morning from the effect of position; and even the *lactifluous* tubercles would then almost disappear, or, at all events, be reduced to mere macules. Under the use of popular remedies, among which he ascribed especial efficacy to chalk and parsley, the discharge disappeared for almost ten months, so that he entertained good hopes of effecting a cure." Meanwhile, however, it was replaced by other symptoms—to wit, *strangury; a sense of internal cold* in the affected thigh, so that the patient could scarcely keep it warm enough by his clothing during the day, nor by bed-coverings at night, even although to the touch the temperature of the foot was not deficient. There was, moreover, a paralysis, or rather a spasmodic and painful rigidity of the joints, which laid up the patient for nineteen weeks together, so that he sometimes could not leave his bed. . .

"The patient presently began to complain of a sense of weight and oppression of the chest, which impeded his respiration in no slight degree, so that he could not lie with comfort on his back if one of the periodical discharges did

not supervene to relieve him. If this symptom grew urgent, and no spontaneous flux occurred, he was in the habit of seeking relief from it, and of reducing the swelling of the thigh, by the aid of a needle. The puncture of even a single tubercle produced, in my own presence, so copious a flow of this milky liquid that more than *twenty ounces* of it were collected in the space of an hour. To check the discharge he used to bind the part with a bandage, and stated that, in a short time, the little wound would close without any other interference. Part of the fluid collected coagulated into a pale jelly, of the same consistence as that usually derived from extravasated blood. This floated in the midst of a serum, not yellowish, but milky, so that any one would pronounce it without hesitation to be the serum, not of blood, but of milk.

"To pursue this history in all its curious details, I advised the patient, in August, 1676, to submit to scarification. A cupping-glass was applied, with incisions, to the outside of the thigh, where he stated that he had never observed any eruption, and from this surface pure blood was extracted. To the internal part of the thigh, over which tubercles were scattered here and there, though nowhere in greater numbers than behind the knee, a second cupping-glass was applied, so as to cover one of the tubercles. Both this tubercle and the neighbouring parts were scarified; and from the tubercle, which was opened with a single stroke of the scalpel, as well as from the two incisions near it, although a blood-coloured exudation was the first result, a pure milky fluid presently began to issue. From all the more remote incisions there came nothing but blood. At length, on removing the cupping-glass, the discharge of blood ceased of its own accord; the milky discharge, on the other hand, continued to flow, the drops becoming more abundant on gentle motion. According to his own statement, this discharge was so obstinate that, unless he had controlled it with bandages, it would have gone on until he had fainted. On being asked whether he felt uneasiness in his leg, he stated that the sense of cold in that situation was not less

than in the thigh, but that it was never affected with any swelling or tubercles, or consequently with surfaces yielding a milky secretion. He was quite satisfied that he had prevented the swelling from descending further by means of a bandage very tightly applied from time to time below the knee, for he dreaded much lest the same affection from which his thigh suffered should also deprive him of the use of his foot.

"In the month of June, 1678, he was bled, by my advice, in the arm of the affected side. I designed this, not only to protect him against more frequently recurring attacks of erysipelas, but also that I might examine the condition of the blood in the upper parts of the body. Nothing, however, unusual or worthy of remark was observed. . . . . ."

It would here be out of place to enter at length on the speculations of the author as to the nature of the foregoing discharge. After denying it "the honour of the name of milk," chiefly on account of its colour not being precisely similar, "but more pale, and shading slightly into yellow;" and after showing, from its coagulating and other circumstances, that it could not possibly be purulent, he goes on to demonstrate that the discharge is not likely to be derived from the veins, arteries, or lymphatic vessels. He finally concludes, as most probable, that it is a "succus nutritius," distributed by means of the nerves; and after defending this view, he introduces, before the conclusion of his article, the following remarkable sentence:—"The physical characters of the *succus nutritius* offer no opposition. For it is 'extremely similar to the albumen of an egg, after this has been somewhat liquefied by the warmth of the hen's body during incubation (Charleton, exercit. i, p. 12; and v, p. 78).' This form and appearance are exactly reproduced, so that one egg cannot be liker another, both by the fluid exuding from the thigh, *and also by that which is not rarely copiously discharged in admixture with the urine.*" This was one of the first ideas which struck me, quite independently, in connection with my own case.

2. The second recorded example of chronic white serous

effusion from the skin, in this case from a female subject, occurred in the north of France. It is referred to by Haller, in his 'Physiology.' The description by Dr. Bourdon being short, may be translated in full.[1]

"I have met, in the course of my practice, with a young woman twenty years of age, from the upper part of whose left thigh as much milk is discharged by small pustules over the pubes, and even upon the labia vulvæ, as a nurse could supply from her breasts. This milk yields butter, curd, and serum, like cow's milk, from which it only differs by a sensible acrimony perceived by the tongue in tasting it. The thigh from which it flows is much swollen, and the œdema, which is unaccompanied with pain, is relieved and diminished in proportion to the amount of the discharge. Sometimes it runs so profusely that the patient has to keep the part bandaged, with firm compresses over the pustules, in order to check it, inasmuch as the abundant loss proves extremely exhausting. The patient is well formed, with a sufficient amount of *embonpoint,* and with her breasts proportionately developed. At seven years white menstrual discharges made their appearance, and have since continued regular, both in quantity and quality. But for the last seven or eight months, if I mistake not, since this milk has begun to flow, she has not menstruated. Except for the exhaustion which has been mentioned, her health is good."

3. A somewhat similar case, not, however, said to have been chronic, and of which the history is very imperfect, is mentioned by Dr. Rommel.[2] A woman who was nursing twins began to complain, a few days after the death of one of them, of a sense of dull pain and tension beneath the ribs on the right side of the abdomen, and over the umbilicus. This feeling was succeeded by itching, the itching by scratching, and the scratching by an exudation of fluid from the skin, the colour, taste, and consistence of which

[1] "Extrait d'une Lettre à M. Lemery, par M. le Dr. Bourdon à Cambrai, contenant quelque chose de fort singulier;" 'Journal de Sçavans,' June 5, 1684.

[2] 'Ephem. Germ.,' decur. ii, ann. viii.

were identical with those of milk, and which yielded a true butter on agitation.

4. In addition to these examples recorded in our own latitude, I think it highly probable that a much greater number may be found to occur in the tropics, in countries where "chylous urine" (as it is called) is a far from uncommon affection. Thus, two cases were recently reported from Canton,[1] in both of which the discharge was from the scrotum. Of one it is stated "that the scrotum was hypertrophied and pendulous, and covered with a large number of follicles;" and further on, "that the follicles were not developed till a year after the fluid had made its appearance by direct transudation through the skin; and that the scrotum, whatever minute changes it might then be undergoing, was then unchanged in size and general appearance; consequently the follicles and hypertrophied skin could not be regarded as the causes of morbid secretion." Now, whatever *follicles* may mean, this account distinctly points to the transudation of the fluid without the formation of vesicles, an occurrence which I shall presently show to be perfectly consistent with the view I entertain of the pathology of the affection. The case cited derives further interest from the circumstance of the skin of the anterior surface of the scrotum having been removed by the knife for its cure; the former symptoms, however, beginning to return in the neighbourhood of the same spot about a month after the operation. The Society may also be reminded of a late communication read before it from Dr. Carter, of Bombay,[2] in which two cases were cited, presenting many points of similarity with those of which we have been speaking.

IV. *Affections essentially or apparently similar.*

Under this head a few remarks may be made on discharges from epithelial surfaces, apparently of the same

[1] 'Edinburgh Med. Journal,' January, 1860.

[2] 'Medico-Chirurgical Transactions,' vol. xlv, p. 189.

nature, physically and chemically, and so far pathologically, as the foregoing discharge from the surface of the skin. The most common of such affections is, no doubt, what is known as *chylous*, or *chylo-serous urine*, a name unfortunately chosen, as seeming to imply a connection with the lymphatic system, which has never been demonstrated. Without entering on a subject which would lead too far, it may yet be right to direct attention to the numerous points of resemblance between cases of white fibro-serous discharge from the urinary or genito-urinary mucous membrane on the one hand, and from the skin on the other. In both cases the discharge is milk-white, deriving its colour from extremely minute molecules, which require high magnifying powers to reveal their presence. In both fluids a coagulum is formed, the greater part of which may be dissipated with ease on agitation; and this coagulum entangles in its meshes cellular elements seemingly identical in character. Both maladies are chronic, and the discharge, though sometimes very copious, does not appear in either of them seriously to implicate the health of the patient. No researches into the morbid anatomy of cases of white fibro-serous urine have as yet had any result; and the completeness with which, on appropriate treatment, the lesions attending a similar evacuation from the skin disappear, renders the existence of any serious alteration of cutaneous structure extremely improbable. Moreover, in one of Dr. Carter's cases, the symptoms of white serous urine and of white serous discharge from the skin were actually coincident in the same individual. Altogether, the analogy between the two forms of affection is very close; the pathology of both is probably similar; and if it can be shown that the chyle, as such, has nothing to do with the production of one form, it would be unscientific to assume, without actual proof, that it takes a part in the production of the other.

Numerous cases of so-called "milky discharges" recorded by old authors are evidently merely copious and perhaps somewhat modified, purulent secretions. Most of them belong to the day when metastasis was a favorite doctrine

of the schools; and whenever a woman suckling her infant had an abscess in any situation, there was a tendency to imagine that it might possibly contain milk. If, at the same time, the secretion from the mammæ was suddenly suspended or diminished, a not unlikely result of inflammatory fever attending suppuration, little further doubt of metastasis remained.

The diagnosis was, of course, firmly established if the purulent secretion chanced to be abundant, thin, and of long continuance. An extensive list of such dubious cases might be enumerated, taking place from wounds;[1] fistulous communications, with cold abscesses or deep-seated suppurating glands;[2] from the surfaces of the peritoneum[3] and pleura; from the uterus[4] and tunica vaginalis;[5] from the mucous membrane of the nose;[6] as a *ptyalismus lacteus* from the salivary glands;[7] as an *epiphora lactea* from the eyes;[8] and even, according to the statement of some writers, from the whole surface of the body at once.[8] I would merely direct the attention of those interested to by far the most remarkable of these cases, recorded by Hoffmann[9] as occurring from the pleural cavity, after puncturing the thorax for empyema. The case is much too long to cite; but it is not at all improbable that it was an illustration of a regular white serous discharge, emanating from some portion of the pleural surface.

[1] Schurig, 'Parthenologia,' Dresden et Lips., 1729.

[2] "A Milky Discharge at a small Orifice in the Groin," by Mr. John Patch; 'Med. Essays and Observ., by a Society in Edinburgh,' vol. v, part i, p. 328, Ed., 1747.

[3] Chomel, 'Mémoire, Acad. des Sciences,' 1728.

[4] Dolaeus, 'Ephem. Germ.,' decur. ii, ann. vi, obs. 76.

[5] 'Madras Quarterly Journal of Med. Science,' vol. i, p. 180.

[6] Richter, 'Med. and Surg. Observations,' Translation, Ed., 1744.

[7] Nuck, 'Sialographia,' p. 50.

[8] Rommel, 'Ephem. Germ.,' decur. ii, ann. viii.

[9] "Disquisitio circa affectum pectoris rarissimum, perpetui succi nutritii ex thorace stillicidii;" 'Frid. Hoffmanni Opera,' suppl. ii, pars ii, p. 434.

V. *Pathological remarks.*

The ascertained pathology of one disease often throws light on that of another. If we acknowledge, as I find no difficulty in doing, the pathological identity of white serous discharges from the skin, and of similar discharges from the genito-urinary mucous membrane, several theories that have been propounded in explanation of one or other of these affections, and, among others, the notion of "a leakage from the lacteal tract," may be discarded, as being as unnecessary as they remain unproved. According to different theories, the fluid has been regarded as milk, chyle, or modified lymph. I am disposed, for my own part, to look on it as *chyliform*, but not *chylous*; as more nearly equivalent to white liquor sanguinis, with certain modifications inseparable from the mode of its secretion.

1. The secretion is evidently not *milk*, as the older authors, naturally enough, supposed. It resembles milk in its general appearance only, while its microscopical and chemical characters are quite different.

2. If the secretion be not milk, the next idea suggested by its aspect is that it may possibly be *chyle*. This chyle must find its way to the secreting surface by a retrograde movement, in the manner suggested by Dr. Darwin in his 'Theory of Dropsy.'[1] That it should get to the kidneys by means of such a movement is difficult enough to believe; but that it should get to the back of the thigh, or, as in Grass's case, to the popliteal region, seems to me perfectly incredible. To do this, it must first be assumed that the lymphatic vessels have been laid open on the excoriated surfaces to permit the passage of their cellular elements; and then that the valves of these vessels, of which there are several in the course of every inch, are insufficient over long tracts, while the flow through them takes place in the wrong direction. The cells in chyle are both larger and more abund-

[1] Good's 'Study of Medicine,' London, 1840, vol. iv, p. 271.

ant than those in white serous secretions, which would probably, however, be explained by their being intercepted by the lymphatic glands in passing back, and by the elements of the glands themselves taking their place. Dr. Carter is a strenuous advocate of this view; and, after all, the only *fact* he can adduce in support of it is, that in his cases the lymphatic glands of the groin were enlarged. Now, I think that, in a case of copious discharge from and irritation of the scrotum, the lymphatic glands would very likely be affected *sympathetically*, or, perhaps, as is not unusual in cachectic subjects, to an extent as great as figured by Dr. Carter, from other causes that may have nothing to do with the discharge. Certainly, in my own case, I could detect nothing of the kind, except a slight swelling during a transient attack of phlebitis, in which, perhaps, the lymphatics participated. That the milky discharge was, in Dr. Carter's cases, more milky than usual after meals, is far from necessitating the assumption of the lacteals as the source of it, inasmuch as the whole serum of the blood is affected after meals in a similar manner. The theory is anatomically impossible, and pathologically unnecessary; in which circumstances the onus of proving its truth, which has yet to be done, lies with its supporters.

3. If not chyle, the secretion may be *modified lymph*, an idea which would have been much more acceptable, it would appear, to the mind of Soemmering than the wild hypothesis just dismissed. "At least," he writes,[1] "after being acquainted with the true nature and properties of the lymphatic system, we will never suffer ourselves to be led to seek, with Darwin, the cause of the metastasis of chyle, milk, urine, or pus, in a retrograde motion of the lymph itself. For all such phenomena can be explained with the greatest ease, in a manner in perfect accordance with nature, and not in utter contradiction to and violation of it." The colour of the secretion in question, however, has no resemblance to that of lymph. The presence of cellular elements could only be accounted

[1] Soemmering, 'De morbis vasorum absorbentium,' 1795.

for on the supposition that the lymphatic vessels were actually ruptured. And finally, in my own case at any rate, there was no evidence of the lymphatic system being affected at all; whereas the state of the venous system was obviously far from healthy, whether we are to regard that as a mere complication or as a more essential condition of the disease.

4. The liquid may also be supposed to represent the white serum of the blood, it having been fully ascertained, by numerous observations on blood drawn after meals of various quality, that after every meal yielding milky chyle the serum of the blood assumes a milky colour.[1] Whatever arguments derived from the qualities of the discharge suggest the idea of the presence of chyle, the same may be used with equal force in favour of this hypothesis, without the insuperable anatomical objections which beset the supposition of a direct origin from the chylous vessels. If the white liquor sanguinis were supposed to transude through the capillaries of the affected part, an explanation would be afforded of the qualities of the discharged fluid, of the presence of the white molecules, of the fibrin, and of the albumen. Only the cellular elements could not be due to such a source. White blood-corpuscles they cannot be; for if we suppose the capillaries ruptured, the red blood-discs would in that case appear as well; and if not ruptured, the white corpuscles could not be conceived as making their exit. The cells and nuclei must, therefore, be epithelial elements, produced in small numbers from the sudoriparous glands, or perhaps occasionally secreted by the rete mucosum of excoriated surfaces.

I think it will be generally conceded that the molecular base of the discharge is derived from the blood. This being granted, and fatty matter having to pass *from* the blood *through* the walls of the vessels, it follows—either (1) *that*

[1] See a paper by Professor A. Buchanan, "On the White or Opaque Serum of the Blood;" and also, "Further Observations on the State of the Blood after taking Food;" 'Transactions of the Glasgow Philosophical Society,' March, 1844, and March, 1845.

the whole serum of the blood must be constantly milky while the discharge is flowing, or (2) *that there must be some special determination of the fatty matter of the blood towards the secreting surface.* Now, I think it may safely be assumed that the serum of the blood, while the discharge is flowing, is *not* continuously and intensely milk white, as it would require to be to account for the colour of the discharge, on the supposition that this filters directly through the walls of the vessels. The serum of the blood has been examined in cases of white serous urine, without having been found in any degree milky from excess of chyle. Nor can I well imagine that it was milky in my own case; at least the normal periodical milkiness of the serum of the blood could scarcely be expected to persist from thirteen to fourteen hours after a meal, at which time I have seen the discharge flowing with a colour quite characteristic.

That this, then, is a simple filtration of minute molecules through a membrane is not readily conceivable. Something there must be to account for an immense determination of fatty matter towards the secreting surface, and the only satisfactory explanation that I can think of refers it to the morbid activity of multitudes of epithelial cells, the function of which has become perverted. As the epithelial cells of the small intestine filter fatty matters from the chyme into the lacteals, is it not conceivable that epithelial cells in other situations may contribute, by a perverted action, to the elimination of fat from the general current of the blood, in which, from time to time, when the serum is milky, it is present in large, though unequal, quantities? The cells, having become gorged with this material, would then separate it, much as a gland separates the principle of its peculiar secretion, *along with* water, albumen, &c., coming directly from the blood, and, of course, independently of the quantity of fatty matter in the blood for the time being. This would explain the circumstance of the discharge being always milk-white, except just on beginning to flow after a period of repose; and it would not be necessary to assume the continual presence of an intensely milky serum in the

blood itself. Dr. Beale's opinion is (l. c.) "that, in true cases of chylous urine, the fatty matter, in a molecular state, filters through the walls of the vessels, and escapes at once into the urine; while in those instances in which actual globules are observed the fatty matter is absorbed into the interior of the cells, where it remains a sufficient time to become converted into distinct oil-globules." In my own case the oil-globules, though, few in number, were sometimes so large that they could not have originated in the interior of cells, but must have arisen from the subsequent confluence of smaller globules or of aggregations of molecules, a mode of formation the probability of which Dr. Beale also admits. The smaller globules, in all likelihood, originated in cells; but the presence of fatty matter in cells is, at the same time, not inconsistent with the preservation of the molecular form. The elimination of it, in such a form, through the medium of epithelial cells, appears to me the only hypothesis fully reconcilcable with the phenomena observed.

The next question is as to the cells through which the fatty molecules most probably pass, and I think it is most natural to conceive them as eliminated through the medium of the glandular apparatus of the skin. Though not by any means denying that a perverted function of the rete mucosum may contribute to a serous flux, I still think that the sudoriparous glands, as excretory organs, would probably take a chief part in any such process. This view is not invalidated by the presence of vesicles, since these form, though perhaps not always, in connection with glandular orifices. On the other hand, according to it, vesicles would not be *essential*, as they would be if we supposed the Malpighian layer of the skin to be the organ of secretion. And in one of the cases above cited attention was directed to the circumstance that the discharge at first made its appearance *without vesicles*, flowing from the surface of apparently normal epidermis. Moreover, the analogy between the pathology of a white serous discharge from the skin, and of one from the kidneys, or any other glandular

surface, would, on such a view, become almost as perfect as the products are similar.

As to the *fibrin*, the origin of it in this case will probably be determined differently by different individuals, in accordance with their general pathological views. It may thus exude from the vessels directly, or it may be secreted by the cells. The phenomenon of its coagulation depends, in all likelihood, on the influence of the cells in the secretion, without which fibrin never coagulates in a serous fluid, and around which the coagulum is deposited.[1]

Finally, I consider the disease to be "a rare functional affection of the glandular apparatus of the skin," accompanied, as eczema so often is, and probably inseparably connected with, a retarded capillary circulation, from the varicose condition of the veins of the limb.

Attacks of white fibro-serous discharge from the kidneys come and go; the symptoms may be even absent for years, but yet return. On their pathological nature I will leave others, more familiar with them, to pronounce; but a knowledge of the fact just mentioned renders the prognosis of the present case of discharge from the skin extremely doubtful to my own mind. Even the turn of life, which my patient has not yet passed, seems to have as little connection with the symptoms as it has been proved to be without influence in cases of white serous urine. I propose, at present, to limit my treatment to perseverance, as far as practicable, in the use of the elastic stocking, with the local application, if necessary, of astringent powders, and an occasional recourse to tonics. At the same time I shall be happy to receive any suggestion as to therapeutics, or as to any other points, in connection with this rare and curious malady.

[1] "Contributions to the Physiology and Pathology of the Animal Fluids," by Dr. A. Buchanan; 'London Med. Gazette,' Session 1835-36, Nos. 28, 29, 30. "On the Coagulation of the Blood and other Fibriniferous Liquids," by Professor A. Buchanan; 'Transactions of Glasgow Philosophical Society,' February, 1845.

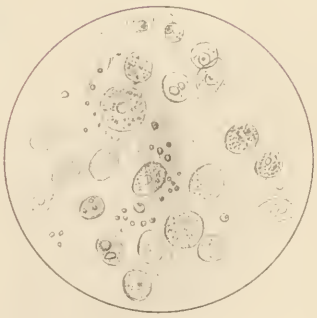
DESCRIPTION OF PLATE III.

Fig. 1.—Cutaneous surface of thigh: the white discharge flowing.

Fig. 2.—Cellular elements in a portion of coagulum.

Fig. 1.

Fig. 2.



OBSERVATIONS UPON SYPHILIS,

IN ITS

MANIFESTATIONS AS A CONSTITUTIONAL DISEASE.

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In a former paper, I described the results of observations upon syphilis in its primary forms.[1] I propose in this one to advert, more particularly, to syphilis in its manifestations as a constitutional malady—the so-called secondary and tertiary symptoms.

I must refer the reader to the first paper for a description of the varieties in the form of the primary sore or chancre. It is essential, however, to remark that two perfectly distinct affections have, frequently, been included within the term primary syphilis; one of which is a local disease only, and is not followed by any constitutional symptoms, while the other is almost invariably followed by symptoms of constitutional syphilis. The first is called the soft, non-infecting,—the second, the indurated, infecting, or true syphilitic sore.

The phenomena connected with and following the last-

[1] The last volume of 'Medico-Chirurgical Transactions.'

named chancre alone form the subject of the following remarks.

True syphilis is at once a contagious and constitutional disease. In these respects it takes its place among diseases such as variola, vaccinia, and the contagious exanthemata. Like those it would appear to attack the same individual but once.

The prevalent doctrines upon this head are—that one attack of true syphilis affords immunity from a second, and that a non-indurated sore is the result of the action of the syphilitic virus upon a body already affected. It is not asserted that this immunity shall be invariable and absolute, but it is contended that the syphilitic disease, being a constitutional one resulting from an animal poison, it takes its place and falls under the same laws as other diseases with which, in these respects, it is allied. We know that, exceptionally, any one of the diseases generated by animal poisons may be repeated in the same body, and so it is probably with syphilis.[1]

[1] The following case is the only example of two attacks of true indurated chancre within my knowledge.

J. M—, æt. 28, presented himself with a sore, oval in shape, suppurating slightly, and occupying the inner aspect of the prepuce. It was of three or four days' standing. There was a suspicious firmness about the base of the sore, which subsequently became the seat of a well-marked and sharply defined induration.

Observing that I tested its character by the touch, the man said, "I had just such a hard sore eighteen months ago." By a reference to his medical history sheet I found this to be true, for the word "hard" was marked opposite his disease; and further, it was found that he had, at that time, remained in hospital nearly three months, and been treated with mercury. The inguinal glands were symmetrically enlarged at the date of his last attack, but he stated that these had remained in that state since the date of his first affection. He had not been in hospital during the interval, for secondary disease, nor could I trace the history of any symptoms of such having occurred.

For the last attack he was treated, at first, with calomel vapour baths, but as some very unhealthy ulceration appeared in the induration, these were discontinued. Six weeks from the date of his discharge from hospital he was readmitted with symptoms of "secondaries."

This disease, depending upon a virus which can be made with the greatest facility to generate its like, is specific in its outward manifestations, definite in its symptoms, and regular in its course. This virus contrasts with other animal poisons as remarkably in the slowness of development and evolution of the symptoms to which it gives rise, as in the cyclical characters by which these are characterised; pursuing a course marked by alternate periods of activity and latency or dormancy. There is the period of incubation, preceding the appearance of its primary symptoms, to be succeeded by another before the evolution of its secondary stage, and by a third prior to the appearance of its so-called tertiary symptoms. Nay, in almost all cases of syphilitic infection, we may observe a remarkable tendency in the disease to progress by a series of curves, as it were; the ascent from latency of the symptoms to their appearance being rapid, and the descent towards inactivity, dormancy, or health, slow.

In all this we cannot fail to recognise a blood-poisoning. No matter whether we consider the *materies morbi* to be present and generating in that fluid, or whether, as Virchow declares, such infection is caused and maintained by the absorption into the blood of materials from separate diseased foci in the solids, we cannot avoid perceiving the parallel between any ordinary chronic, and a syphilitic poisoning.

Without entering into all the materials and details from which my observations have been drawn, which would be a very tedious proceeding, I will endeavour to trace, succinctly, the evolution and succession of syphilitic symptoms as ordinarily witnessed among soldiers.

After the true syphilitic primary sore upon the penis, the inguinal glands commence to become symmetrically enlarged and indurated, at a date corresponding, pretty accurately, with that of the induration appearing in the chancre. These chains of inguinal glands remain so affected for a very long time, and in spite of a course of mercurials, and,

hence offer a reliable test as to an infection with syphilis at a previous date.

The earliest constitutional occurrences after these, are—a gradually advancing chloro-anæmia, with, frequently, an engorgement of some of the cervical glands (particularly those in the posterior and lateral aspects of the cervical region), and vague muscular pains, simulating rheumatism. The anæmia becomes early marked, but it is obviously difficult to define the exact date of its appearance, or to say how much may be due to hospital treatment, &c.

Enlargement of the posterior cervical glands I have traced as early as the fifth week from the date of the appearance of a primary sore, but it is generally nearer eight to twelve weeks that these can be discovered. They are much less frequently affected, and remain enlarged for a shorter period than those of the inguinal regions, and differ from them in feeling swollen only, without that well-defined hardness present in the latter.

The rheumatic or osteocopic pains are not always nocturnal only in character, and vary very much in degree and amount. They sometimes simulate a fibrous rheumatism and affect the sheaths of tendons and muscles. Sometimes, however, they are distinctly nocturnal, and are attended with much tenderness along the course of the long bones; syphilitic nodes, however, rarely appearing.

Often sore throat does not appear at all; when it does, it is one of the earlier symptoms. It varies in degree from a localised redness and congestion to one of extensive ulceration.

In every case of infecting chancre, when not treated by specific remedies, that I have been able to trace, some constitutional symptoms (however slight these might have been), have appeared within three months from the date of the primary disease.

In the great majority of cases the syphilide of the skin makes its appearance after these premonitory symptoms, and without any pyrexia, and, at first, is so trifling in character as to escape the attention of the individual. It

ordinarily appears in the form of a dull-red erythema, upon which the squamous and other forms of eruption develope themselves.

In no diseases of the skin are these affections of so mixed a character as in those caused by the syphilitic virus. Of course cases of unmixed and typical examples of psoriasis, lepra, &c., are common enough, but the majority will partake of more than one affection at the same time, and upon the same or different parts of the body.

This commingling and admixture of eruptions of syphilitic origin is very peculiar, and renders their classification difficult.

Iritis, under my observation, has appeared more frequently in the papular forms of syphilide than in the squamous or pustular.

In the majority of instances (happily) no tertiary symptoms appear. After many relapses perhaps of the secondary symptoms, the patient slowly recovers. Of the remaining cases, some have tertiary symptoms, slight in degree; others, these symptoms very severe and difficult of cure. Of course, however, it requires that patients should be for years under observation before we can conclude that no tertiary symptoms have followed.

I may here remark, that constitutional symptoms appear under two typical limits, which contrast with one another.

Thus, a cutaneous syphilide, wide in extent and very superficial in character, denotes the milder degree of constitutional infection; while the discrete and localized morbid processes, affecting the deeper tissues of the skin and mucous membrane, have the opposite character of a severe degree of syphilitic infection.[1]

[1] The results obtained from "confrontation" upon the continent tend to establish the doctrine of the two sores (soft non-infecting, indurated infecting), generating their like; but no observations have been yet made as to whether the severer and milder degrees of syphilitic infection result from different degrees of activity or potency in the virus—*e.g.*, as obtained from different stages of the disease furnishing such virus; or whether these depend upon some constitutional differences in the persons of the recipients of the virus.

With a view to prognosis, it is important to inquire:—What relation (if any) has the severity of the primaries to those of the later symptoms?

From a consideration of my own notes of cases, I should infer that the following would be as approximate expressions to the truth as the facts warrant.

1st. That the greater the induration, and the longer the period during which primaries remain unhealed, the more certain will be the severity of the constitutional infection.

2nd. That the amount of ulceration, &c., of the primary sore stands in some relation to the worst and more intractable forms of secondary affections; *e. g.*, the pustular, ecthymatous, rupitic, the unhealthy ulcerations, nodes and gummatous tumours.

If the preceding gives a rough outline of the ordinary course of syphilis, it must not be supposed that the evolution and succession of the stages and symptoms of that disease, as witnessed in the army, are always so regular.

Assuming that when an indurated sore has been recognised by the army medical officer, some specific treatment has been applied, and that soldiers are exposed to changes of climate, we might infer, what is actually the case, that the constitutional symptoms would be irregular in their appearance, and varied in their kind.

Instead of the regular course, we find that primary disease and affections of bones may, though very rarely, coexist, or the tertiary occur after the primary symptoms, without the intermediate stage; while symptoms, usually denominated secondary, may coexist with osteal affections; also, after variable but long periods often of apparent latency of the syphilitic element, there may be a sudden outbreak of constitutional symptoms; and lastly, a chloro-anæmic and cachectic appearance may be the only evidence of a syphilitic taint, without the appearance of the ordinary phenomena of that disease.

An attack of constitutional syphilis so frequently appears in the soldier (after a period of latency of varying duration),

consecutive to hospital treatment for some disease unconnected with syphilis, that, I fancy, we may often conceive the latter to stand in the light of an exciting cause. A large proportion of men, whilst recruits, unfortunately suffer from primary sore. In some, the secondaries follow so speedily, and affect the constitution, development and nutrition of the body so gravely, as to render them for years or permanently, unfit for the performance of a soldier's duties; but with others it is far otherwise. The recruit in due course goes abroad, after having been specifically treated and cured (?) at home, and years afterward perhaps, suffers from some disease incidental to the climate, or a pulmonary affection, from which he recovers by a tedious convalescence, during which symptoms of syphilitic disease make their appearance. Here, probably, the efficient cause has been the primary infection, the disturbing cause the treatment, and the exciting cause the last disorder, its treatment, or the confinement within the walls of a hospital.

THE OCCASIONAL CONTAGIOUSNESS OF THE CONSTITUTIONAL FORMS OF SYPHILIS.

"Syphilis proper," says M. Rollet, "is hardly a venereal disease; for it is in a great number of cases communicated independently of sexual congress."

The belief in the contagiousness of constitutional syphilis is a comparatively modern reaction, which threatens to carry us back to an early period in the history of syphilis, when this was a firm principle of faith. I need only advert to the authorities by whom the contagiousness of certain forms of secondary sores have been described. Tracing its history from Wallace's doubtful case in 1835, we pass at once to the period when Waller, of Prague, succeeded in producing syphilitic disease by inoculation, from a secondary lesion. In later times, Rinecker, Gibert, and Vidal have likewise succeeded. The French Academy of Sciences, in their report,

also have given an affirmative decision. Diday, in his work on 'Infantile Syphilis' (translated by the Sydenham Society), has fully described the contagious properties of inherited syphilis; and more recently still, Rollet has traced the contagiousness of secondary lesions, between adults, among the workers at a glass factory. Even Ricord has given his affirmative judgment upon the question.

Langlebert, Rollet, and Fournier, have advanced good evidence to show that the evolution of syphilis is essentially the same, whether obtained from a primary or consecutive lesion, viz., first, a chancre and glandular affection, and, subsequently, constitutional symptoms! This would be analogous to what we know of the regular evolution of other diseases of the blood-infecting type.

It is not a little remarkable that syphilis was universally held to be contagious, in all its stages, at the earlier dates of its past history.

If the primary forms of syphilis be alone contagious, and no other, how can the continuance of syphilis to this day be explained? How could a woman notoriously infect many men over a long interval of time? Are we to suppose that the purulent discharges furnished by those diseases of the uterus, which are so commonly the accompaniment and mark of constitutional syphilis in women, have no contagious properties?

Case.—G—'s wife came to hospital in 1860 (winter), complaining of nocturnal pains. Upon the left tibia was a node, with ulcerating tubercles upon the lower extremities. The woman was living in a wretched lodging, apart from her husband, who had not been in hospital with any venereal affection for years. I concluded that the source of disease was from some other man—not her husband. The room which she occupied was very small, and contained one bed and a sofa. This woman had two children; an infant, six months old, at the breast; the other, a girl between four and five years of age. The infant was emaciated, with a face expres-

sive of syphilitic cachexia; mucous papules existed upon the perineum and between the flexures of the thighs, and an erythematous rash was present. The lips were fissured, but neither ulcers nor mucous tubercles existed there. The second child had palpebral conjunctivitis, slight sore throat (not ulcerated); engorgement of the posterior cervical glands; a mixed syphilide upon the skin (lichen and herpes), psoriasis palmaris of both hands, and a chloro-anæmic aspect. The woman's nipples were not sore. I failed to trace primaries upon any one of them, and the woman's evidence I discarded. She said that the children had been washed in the tubs used for washing the soldiers' linen, and suggested that they had so contracted disease. She told me that she "had dreadful weary nights" with them, as they always seemed to be worse then. At first the symptoms were not by any means so clear as I have indicated. My treatment was directed to struma, the correction of improper diet, &c., however, without much success. Subsequently, I gave the mother iodides of potassium and mercury; and to the children, a mixture of mercurial and oxide of zinc ointment, with bichloride of mercury, iodide of potassium, and cod-liver oil, internally. The children were almost immediately relieved, and ultimately cured.

It has been before stated, that the observations of the best authorities are corroborative of the doctrine that a syphilitic virus, from whatever source obtained, induces in the person inoculated therewith a primary lesion—chancre. Remembering how very trifling the erosion of the primary initial lesion may be, it is of course highly probable that such, when it existed, has been overlooked.

I was consulted upon the following circumstances. A gentleman was suffering from symptoms of constitutional syphilis. Besides other symptoms, he had some fissures and epithelial ulcers upon the inside and angles of the lips. These were certainly not primary, but a part of the secondary symptoms under which he was suffering. He stated that he feared he might have infected a female, by labial

contact. From the nature of her symptoms, I inferred that his fears were well grounded. In due course of time, this female suffered from constitutional syphilis, and was treated for such by some eminent professional men. The first symptom in her, was an irritable-looking and indolent fissure upon the mucous membrane of the lower lip.

The pathological course of syphilis—as far as it is patent to our senses—appears to proceed in those structures of the body which are often denominated the connective tissue, or modifications of it. There is a tendency to the production of a lowly organized lymph in various parts of these structures. For example, the integument, the mucous membrane, the iris, the periosteum or bones, the cartilages of the larynx, the throat and tongue.

The occurrence of symptoms of disease in the structure of internal organs in some cases of constitutional syphilis has not escaped the attention of various observers; but it is only of late years that these morbid processes have been made the object of pathological research.

The reason why these internal syphilitic affections have been received "with more than scepticism," as Dr. Wilks remarks, has probably been due to two causes.

1. That the external and visible manifestations of syphilitic disease were supposed to be the only morbid phenomena, and the internal structures of the body, in syphilitic cases, did not receive any attention.

2. That the symptoms induced were such as generally carried the patient out of the observation of the surgeon into that of the physician; so that the latter had to work out the history of a prior syphilitic taint, which was often separated from these later occurrences by a wide interval.

Whatever the explanation may be, the fact remains, that most physicians in large practice have treated cases of this kind, and have learnt to recognise them as of not infrequent occurrence, possessing, as a whole, marks which distinguished them from ordinary inflammations and diseases, and often,

that they were more amenable to the action of appropriate remedies.

These patients, in addition to a history of syphilitic disease, exhibit so many appearances in common, that they admit of being grouped in this description :

They present a condition of chronic chloro-anæmia, with flabby muscles, deficient in tonicity ; adipose tissue small in quantity ; a rough state with a darkened hue of the skin, the cutis of which is deficient in contractility ; more or less hypertrophy of the lymphatic glands (particularly the inguinal and post cervical); a thin crop of hair ; a muddy complexion, and a listless, jaded aspect.

There is much evidence to prove that the waxy degeneration (amyloid, bacony) of glands, &c., has (*inter alia*) a syphilitic cachexia for its exponent, and that the gummatous tumours and fibroid deposits of internal organs, are as direct a product of the syphilitic element as the nodes, &c., are the result of a syphilitic inflammation.

The pathological state of the internal organs accompanying a syphilitic cachexia has of late years been much studied and elucidated by many observers, particularly by Dr. Wilks and Virchow.

Cases of intra-cranial and nervous disease may be mentioned as among the more frequent, although not the only, illustrations.

Such have been observed by numerous continental writers, and have been described by Drs. Todd, Wilks, Read, Roberts, Brown-Séquard, and others.

The following cases are noteworthy in many respects, and not the least so in reference to this very subject.

George G—, æt. 28, suffered from an indurated chancre, about a year ago, for which he was treated with calomel vapour baths. His system was easily affected by the mineral, and its use was early discontinued. Four months after this, he suffered from secondaries ; subsequently he was treated for syphilitic rheumatism and nodular, indurated swellings about the subcutaneous tissues of the legs. Nine months

from the date of his treatment for primary disease, he was admitted into hospital with nodes upon the tibiæ, and cutaneous ulcers of the lower extremities. From these he recovered under the use of iodide of potassium and local applications, but before leaving the hospital he began to exhibit a new series of phenomena, referable to the brain. At first it was noticed that he was very lethargic and drowsy. Towards night he complained of pain in his head. This pain was not localized to one particular spot. One night he became delirious, and the following morning presented these symptoms: aroused with difficulty; taciturn in manner, but rational in his answers; apyrexia; pulse slow (68), weak; bowels confined, pain in head as before. The pupil of right eye was contracted and sluggish, that of the left was normal. There was no paralysis, but he grasped with the left hand a little less firmly than with the right. Vomiting soon set in, so that nothing was retained in the stomach. He next began to pass his motions in bed, still remaining rational when aroused. Whilst in this sleepy, lethargic state, he would, every now and then, seize the penis and scrotum with both hands, and violently rub them; to such an extent was this done, that the parts became abraded and swollen.

He emaciated rapidly, and the abdomen assumed a concave aspect. The scalp was blistered, and the blistered surface treated with mercurial ointment. A mixture of that ointment with croton oil, was rubbed into the belly, and iodide of potassium given in full doses. From these more urgent symptoms he has recovered, and appears now well nourished. His present state (four months subsequent to the onset of this attack) is one of dementia. Hesitation of speech (which in a slight degree was natural to him) is exaggerated, and he mumbles a good deal; is prone to shed tears upon slight causes; constantly forgets the situation of his ward, as well as of his bed in it; is remarkably dirty in his habits (although shut up at regular times in a water-closet he will pass his motions immediately after leaving it). He is generally, but not always, rational in his answers and

very docile, but he wears a heavy idiotic expression. Appetite good; performs all his functions with regularity. He shuffles slightly as he walks, and his right pupil is frequently, but not always, smaller than the corresponding left one. He is very slowly recovering under the use of counter-irritants to the scalp, iodide of potassium, iron, and iodide of mercury. This improvement was only temporary, and he was sent to a military lunatic asylum.

The next case is interesting in the following particulars: —1st. The development of symptoms indicative of venous or lymphatic absorption of some of the diseased products of secondary lesions. 2nd. Ophthalmic disease, paralysis of third nerve, and symptoms indicative of some intra-cranial syphilitic affection.

George R. M—, æt. 26, contracted a primary Hunterian chancre in September, 1861, with multiple non-suppurative buboes. Treatment with mercury, and discharged cured in six weeks.

In February following he was admitted for a cutaneous syphilide. The disease chiefly affected the lower limbs, and was of a very mixed character (lichen, eczema, and impetigo).

One evening he suffered a rigor and became very feverish. Upon the right lower limb were numerous pink lines, running upwards towards the groin, from pustules upon the leg. Erysipelas set in about the dorsum of the foot, and large bullæ made their appearance upon the front of the same leg and thigh; numerous abscesses appeared afterwards in the same localities. The left leg was also affected in a similar manner but much less. The constitutional powers of the patient were very low, necessitating a liberal use of stimulants. After a protracted illness he slowly recovered.

In September, 1862, he was readmitted, after having suffered for about a week with pain in the forehead and left eyeball. There was imperfect ptosis of the left upper eyelid, paralysis of the internal rectus, and dilatation of the pupil. The affected eyeball was more prominent than its fellow. The ball was rather more tense to the touch, also; and the

anterior chamber seemed to be diminished in size. Vision was not much interfered with, so long as the healthy eye was closed, but became indistinct when both were used. In the eyeball the pain was very great. The ciliary muscle was divided and the aqueous humour escaped. This was attended with speedy and marked relief to the pain. About three weeks after admission he began to be sleepy and heavy, and the pulse (normally slow) was only 54; the bowels were constipated. He had a fit occasionally, attended with loss of speech, temporary paralysis of the right side of the face and body, but without loss of consciousness. One of these fits occurred whilst a medical officer was present, when these symptoms of paralysis were distinctly marked, and attended with great hyperæsthesia of the affected side, but they passed off in the course of about half an hour. He was often incoherent and delirious, particularly during the night, and generally remained drowsy, and taciturn in manner. He had not convulsions.

There was a good deal of lachrymation from the affected eye. The fifth nerve was apparently unaffected; neither the tongue nor the palatal muscles were affected.

This man perfectly recovered under the continued administration of specific remedies.

Paralysis of the motor nerves of the eye is not at all an uncommon lesion resulting from the syphilitic taint. The frequency with which these are affected appears to be in the following order, viz.:—the third pair of nerves much the most commonly; next the sixth; and finally, the fourth.

Von Graefe attributed this class of cases of paralysis to constitutional taint in nearly half of all those he met with.

The pathology of these paralyses has yet to be worked out. In each of Dixon's two cases ('Medical Times and Gazette' October 23rd, 1858), a tumour—surmised to be syphilitic tubercle—was found in the substance of the nerve. It appears to be more rarely due to disease of the bony passages or their lining membrane, than to softening of the nervous

tissue. Virchow quotes cases depending upon this last-named cause.

The history of the cases already given would be suggestive of a cerebral cause, rather than of some affection of the nerve only.

They generally yield, but not by any means always, to the treatment required for tertiary symptoms, during the earlier stages of which they are apt to appear.

Case.—Gunner R. W— suffered from an indurated chancre, with symmetrical affection of inguinal glands. The man had neglected to report himself until the disease had existed for some time. He was treated by mercurial vapour baths, &c. Secondary infection was evidenced by chloro-anæmia and muscular pains. One morning he discovered, by accident, that the left side of his face was paralysed. The throat was not ulcerated. The muscles supplied by the facial nerve (including the buccinator) were paralysed. There were no phenomena referable to altered sensation. He could partially close the left eye. Neither the palate nor the tongue was affected; and the sense of hearing and power of speech were perfect. Pain existed in the neighbourhood of the mastoid process, most severe at night. Under the influence of mercury and iodide of potassium, he recovered; but a syphilide (lichen) appeared upon the trunk, and iritis of the left eye occurred, whilst he was recovering from slight ptyalism.

Case.—Gunner H— had been two and a half years in the service, one year of which he passed in Malta. He was admitted with anomalous symptoms of a dyspeptic character, which ran a tedious course. He had suffered from chancre at Woolwich, as a recruit, but had not any secondaries afterwards, save sore throat once. He was anæmic, and became slowly but progressively emaciated. No adequate cause for his symptoms could be discovered. Whilst at the Sanitarium, Citta Vecchia, he was seized with symptoms supposed to be referable to meningitis, and he returned

to hospital under my care. There was not then fever. He was incoherent, and inclined to be violent and maniacal. I could not trace any symptom of paralysis, nor phenomena referable to an altered sensation. His delusions were of a peculiar character, and had reference to his food, which he declared to be dirty and poisoned, and he always refused to eat it. He used the most abominable language at times, but was never ill-tempered; on the contrary, he was inclined to be jocose. The spleen was slightly enlarged; renal secretion healthy (but copious in amount, and of low specific gravity). The glands about the groins and neck were unduly prominent. He complained of rheumatic pains, and one testicle enlarged during his convalescence. The conjunctivæ were slightly tinged yellow; the skin was of dark hue. It was noticed that he slept very badly at night, and that his maniacal symptoms almost invariably increased at that time. At last I thought that his symptoms might be due to some syphilitic disease, involving the meninges or cranial bones, and he was placed upon iodides of mercury and iron, when ultimately he made a perfect recovery.

Case.—Corporal R. E—. History of an attack of syphilis two years before. Treated by mercury then. Cannot remember to have suffered from any cutaneous eruption or affection of the eyes, &c. When admitted, he had all the symptoms of a very chronic dyspepsia, followed by anæmia and slight icterus. His tongue remained remarkably foul for months, and was not improved after the use of medicines. He became subject to attacks of extreme nervousness, without any loss of consciousness, and the amount of urine (always great) then became much increased, pale, and of low specific gravity (simulating hysteria). An examination of that secretion did not afford any evidence of renal disease. Paralysis of the third cerebral nerve appeared. The pupil of the right eye was dilated (it dilated much more by belladonna, which is interesting); the eyeball was rather prominent and turned a little outwards, and could

not be turned inwards. He was treated afterwards with iodide of potassium and mercury, with great benefit, but I lost sight of the case.

Case.—Sergeant C—, R.E. Had frequently suffered from venereal disease, but had not been affected with any sore or gonorrhœa for two and a half years. Did not remember ever to have had any cutaneous disease. Had been treated with mercury for prior affections. His medical history involved frequent attacks of epilepsy, at uncertain intervals, and preceded by extreme pain in the left temple. Admitted for one such attack in 1861. He became delirious and semi-comatose, after frequent complaints about the violent character of the pain in the temple, and its constancy, although it was worse and required strong opiates at night for its mitigation. The bladder and sphincter ani became paralysed. He passed everything involuntarily. There was a doubtful weakness, perhaps, but certainly no paralysis of the right side. No alteration of pupils, nor phenomena referable to sensation. Upon the left temple, at the seat of the pain, a soft swelling appeared (node?). He was placed under the influence of mercury, with the most remarkable benefit, at a time when a fatal issue seemed impending. After many relapses and a protracted convalescence, from bed-sores, he ultimately recovered.

Upon the subject of pulmonary disease, affecting an individual suffering from constitutional syphilis, I would make a few remarks.

It has happened, upon more than one occasion within my experience, that a syphilitic subject has exhibited symptoms simulating phthisis so closely as to have justified that diagnosis, and the subsequent recovery of the patient has tended to excite much doubt as to what had been the true nature of the lung disease.

Within the limits of this paper it is impossible to do more than make bare mention of them. In one case all the physical signs of advanced phthisis were present, as well as the general and concomitant symptoms, with the

exception that there was an absence of any history of hæmoptysis. The diagnosis was considered as established by three different medical men.

The appearance of nodes upon the tibia, combined with periosteal and muscular pains, so severe as to prevent the patient's sleeping at night, led to the use of the iodides of mercury, potass, and iron, with an improvement at once so rapid and marked as to leave no doubt of their efficacy. The man, apparently, made a perfect recovery.

The following may be cited as a set-off against the evil notoriety which syphilis has so justly attained as an exciting cause of tuberculosis.

A medical friend, beside presenting the physical signs of pulmonary tubercle, suffered from cough, steadily progressive emaciation, frequent attacks of hæmoptysis, and night-sweating, &c. He had the misfortune to contract a syphilis, for the primaries of which he took no mercury. Although he suffered much from symptoms of constitutional infection, there appeared to have been a remarkable arrest in the progress and development of his phthisical symptoms, which, as a medical man, strongly arrested his attention. From a stage of apparently active tuberculosis he passed to one of comparative health in this respect, and, for all I know to the contrary, yet continues in this state.

An officer was invalided for consumption from China in 1860. He had there contracted a syphilis. He was told by Dr. C. J. B. Williams (by whom he was treated) that he had phthisis. Two years ago the physical signs of a consolidated lung and softening tubercle existed. Symptoms of constitutional syphilis have appeared at different times, and the symptoms of pulmonary disease have diminished.

THE INFLUENCE OF A WARM CLIMATE UPON CASES OF CONSTITUTIONAL SYPHILIS.

Judging from my own experience of a Mediterranean climate, from Malta to Gibraltar, I may state, that syphilis

is cured there with great difficulty, during the hot summer months. From inquiries that I instituted among other and older resident surgeons, I found the same opinion very generally held. The prevailing diseases of the climate are fevers of an enteric and nervous type, gastric derangements, rheumatism, and neuralgia.

As eminent London men often send their phthisical patients to Malta, so is the Mediterranean often recommended for syphilitic ones—a recommendation, in either case, justifiable enough for the colder months (winter and spring), but most mischievous during the remaining periods of the year. Over and over again, during the hot months, symptoms of constitutional syphilis have refused to yield to any treatment until the winter set in; and as frequently almost they proved so intractable as to require invaliding to Great Britain, where the patients regained their health often rapidly, without any treatment, or with the aid of the same measures as had failed entirely in the relaxing climate of the Mediterranean.

Case.—An officer the subject of constitutional syphilis was advised by a surgeon of eminence in London to exchange to the Mediterranean. Arrived at Malta, he speedily became the subject of a tubercular eruption. He took it into his head that "elimination" was the true principle of treatment, and, with this end in view, he went to the baths at Ischia and Tripoli, using violent exercise also to induce sweating. Upon his return, after two months' absence, I think that I never saw a more deplorable alteration than the treatment had induced. He told me that the baths and exercise had acted most freely upon the bowels and skin. He was much emaciated, had lost all his hair, and was obliged to wear a wig; large ecthymatous sores existed upon the scalp and extremities. He was invalided to England, where he speedily recovered. By the same authority he was again advised to try Malta, which he did. In less than four months after rejoining his brigade the disease recurred.

Sloughing ulcers appeared upon the legs, which were no

sooner healed than they broke out afresh. Convinced that the climate of Malta would permanently injure him, he returned to Great Britain, and speedily regained his health.

The comparative immunity of the convicts at Gibraltar from constitutional syphilis, remarked upon by my friend Mr. Nesbitt, has therefore probably more reference to the nature of the convict's life, diet, &c., than to the influence of climate.

While syphilitic patients bear the dampness and inclemency of an English winter and spring very badly, they appear also to be injuriously affected by the other extreme—of moist heat. The effect of the latter is in itself too depressing to admit of a prolonged course of such remedial measures as mercury and the preparations of iodine.

Since this paper was written the lamentable occurrences at Rivalta, of syphilitic inoculation through vaccination, have taken place.

The suggestion first offered by Annibale Omodei, that the vehicle of the infection in such cases was the blood, and not the vaccine matter, became the subject of observation and proof by Viennois. It was not long before the new doctrine became pretty firmly established by these and other occurrences in Italy.

Having read all the statements published by those who were eye-witnesses of the facts, there remains very little room for doubt as to their truth, and the practical lessons which we are bound to extract from them.

This outbreak of syphilitic disease recalls those periods in its earliest history when the sphere of its contagious influence appeared to be far greater than now, its spread being so rapid in its advance and wide in its circle as to resemble the spread of an epidemic, rather than the slow and progressive steps of a disease held to be contagious only during one and a limited stage of its progress in the individual. The symptoms of the disorder amid the rural population of this Italian village were quite parallel to those described

and handed down to us by the earlier writers. During its outbreak in the fifteenth century, as in that of the nineteenth, the cutaneous affections resembled a form of variola; papular and lenticular spots diffused over the surface of the body, becoming pustular, and degenerating into chronic sores, the outbreak often ushered in by constitutional symptoms of a pyrexial type.

REMARKS

ON

TWO CASES OF KELIS.

BY

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In the thirty-seventh volume of the 'Transactions of the Royal Medical and Chirurgical Society,' there is a paper by the late Dr. Addison, on the "Keloid of Alibert," and on the form of kelis which that distinguished physician considered to be of a distinct character, and which he designated "true keloid."

Within a short period two cases of kelis have come under my care, at Fort Pitt, Chatham; the one presenting the appearance of the fibrous tumour classed by Dr. Addison as the "keloid of Alibert," the other offering so very striking an example of what he described to be "true keloid," that I have thought some brief reports of these cases of this rare disease, with the accompanying drawings and casts, might be of interest to the Fellows of the Society.

The first case which I have to notice answers the description of the "keloid of Alibert," or rather of that form to which Alibert, as Dr. Addison mentions, himself applied the term "spurious or false keloid," in consequence of the disease being developed upon a cicatrix, and not appearing

spontaneously. Among other exciting causes incidentally mentioned in the paper by Dr. Addison, is the cicatrix resulting from the infliction of the punishment of flogging. This case presents an example of the disease following that exciting cause; but, at the same time, the very slight nature of the punishment in this instance, and the appearance of spots of a similarly diseased character in other parts of the body, sufficiently attested the fact of a pre-existing constitutional tendency to the affection.

The following is the history of the case referred to:

Private J. E—, 41st Regiment, æt. 24, born in Shropshire, employed previous to enlistment as a labourer, a man of good health, though of rather intemperate habits, was flogged at Devonport, on the 19th of September, 1859, for disgraceful conduct, and received fifty lashes. He received nearly the whole of the lashes on one spot, namely, upon the skin over the supra-spinous fossa on the left side. Staff-surgeon Donald writes—"The corporal punishment inflicted on Private John E— was light, and there was very little laceration of the skin." He was nearly one month in hospital after the flogging, but was chiefly under treatment for "gonorrhœa." He then went to duty, but when he carried his pack the pressure of the cross-belts against the cicatrix caused itching and uneasiness. About three months after the punishment, during two months of which period he had been wearing his belts and pack, he first noticed a growth from the cicatrix, which gradually increased from the size and shape of a small, round tubercule, to a large, flat mass, nearly as large as a man's hand. There was not any amount of pain from this growth during its formation. He states that none of his family were subject to tumours of any kind, to his knowledge.

Condition noted on his admission at Fort Pitt, on the 22nd of June, 1861:—"He is a very tall man, of strong-looking frame. On the left shoulder, commencing about an inch from the spine, and covering the whole of the supra-spinous fossa, is a flat tumour, or elevated patch of

hypertrophied tissue, about the size of the palm of the hand. It was upon this situation that the man received the flogging. The mass in its longest diameter is five inches, and its greatest breadth is three and a half inches. Its thickness seems to be about one inch. The tumour is of a flesh colour, pinker than the skin, particularly smooth to the touch, although marked by small pits, and puckered by several deep, furrow-like depressions, from the bottom of which a few hairs spring. The circumferential margin of the patch is irregular in outline, from being deeply indented at various points. On the front of the patient's chest are several very small tumours, evidently of the same nature; these first appeared as small spots of acne, but he cannot remember the date of their first appearance.

"He says he never had syphilis.

"The tumour is irritable and tender if subjected to continual pressure, the tenderness, however, not amounting to actual pain; it is also sensibly affected by the occurrence of damp, and other changes of weather.

"Its appearance on the breast, as well as on the back, shows such a tendency to the development of the disease, that operative interference is considered inadmissible."

This patient was manifestly unfit for service as a soldier, from being unable to wear his belts or carry a knapsack, and was, therefore, discharged as an invalid. He proceeded to Leominster, as his place of residence.

It may be worthy of mention that Professor Maclean informs me that two cases of kelis have come under his notice, in each of which the disease had its origin in flogging. One of these occurred in a young soldier of the 18th Regiment, of which Dr. Maclean was then in medical charge; the other in the 55th Regiment. These cases occurred in China in 1841-42.

The disease in the next case is much more extensive in character, and is the one which answers to that form of kelis which Dr. Addison sought to separate from the

former variety, under the name of "true keloid." The drawings and photographs sufficiently indicate the appearances of the disease, and I proceed at once to give the history of the case.

Private Robert McF—, 2nd Dragoon Guards, æt. 43, a man of spare but muscular habit, was admitted at Fort Pitt on the 29th May, 1862, to be invalided from the army, on account of a disease of the skin, which appeared in India, and was at first mistaken for a form of leprosy. The patient states that previous to enlistment, in the year 1839, his occupation was that of a blacksmith, and that since he joined the service he has performed the duties of farrier in his regiment. He has always enjoyed good health, with the exception of an attack of typhus in 1838, and the contraction of a venereal sore in 1841. The sore, he mentions, was never followed by secondary symptoms, nor does it appear from the medical records that he has ever suffered from a constitutional syphilitic taint.

Private McF— landed in India, in November, 1857, and states that for the first five months he did not suffer from prickly heat (lichen tropicus), but at the expiration of that time began to suffer from it. While in cantonment at Meerut, in May, 1858, and after having suffered in common with all the other men of the regiment from the usual symptoms of prickly heat for about a month, the present disease first made its appearance. It began as a few prominent, red tubercles, on the right forearm. It next appeared over the middle of the sternum, a situation which appears to be, from the statements of most observers, its "seat of election." From thence it extended in a gradual manner towards the two sides of the body. At the same time it appeared on the left shoulder and various parts of the back, and continued spreading until it had covered the entire dorsal surface, as shown in the photograph. The patches of hypertrophy appeared at first as small tubercles which, gradually increasing in size, and

meeting each other, coalesced into larger growths. These growths sent forth spur-like processes on every side, a slight puckering of the healthy skin, which surrounded the marginal limits of their bases, marking their progress. The spread of the disease was very slow and gradual; a period of two years elapsed before it had attained its present extent. His general health has never suffered in the smallest degree from the affection. The only annoyance he has endured in consequence of it has been the intense itching irritation which has accompanied it, more particularly when he has been warm in bed at night and in warm weather.

During the cool season in India he did not suffer from this distressing symptom, and he observed that if the cold weather lasted sufficiently long, not only did the pruritus cease, but the vivid redness of the keloid growths faded away. Even a partial disappearance of the growths would take place on continued cold, the prominences sinking, and leaving instead the peculiar old cicatrix-like condition which is visible in various directions.

None of his relatives had ever suffered from any similar affection, nor is he aware of any having died from cancer, or malignant disease of any form. There was no reason to suppose that the disease had been aggravated by intemperate habits.

Condition on admission at Fort Pitt, Chatham, 29th of May, 1862:—On examining the patient, whose general health appears to be excellent, the condition of the respiratory, circulatory, digestive, and excretory systems being all normal, we first notice in front some spots of kelis scattered over the upper extremities, and some bands stretching across the lower part of the chest. Behind, nearly the whole surface of the back, especially over the scapular regions, and a large portion of the surface of the loins, are covered with a network of this morbid growth, of the most striking appearance. The inferior extremities are quite free from the disease. The patient's face is covered by

small, rugose growths of the same character, interlaced in such a way that the depressions existing between them appear pitted, and closely resemble the marks left by variola. The part of the body which presents the keloid hypertrophy in the most marked aspect, the interlacing of the prominent fibrous ridges being most close, the depressions among them deepest, and the general resemblance to tightly drawn cicatrices strongest, is the left scapular region and its neighbourhood, including the posterior aspect of the shoulder. It is in this situation that the pressure of the cross-belt is chiefly exerted. In like manner, the part of the anterior aspect of the body which exhibits most of the keloid growths is that which is ordinarily subjected to the pressure of the waist-belt.

So much for the general position and characters of the disease; its more particular features, as noticed on closer observation, are as follows. It consists of excrescences, or rugged, cuticular folds, of various shapes, but generally appearing like oblong bands, joined together in such a way as to enclose within them spaces of a more or less oval outline. The folds rise abruptly from the cutaneous surface to a height averaging two or three lines. Their margins are observed to be generally more elevated than the intermediate portions. The skin covering the depressions enclosed within the keloid ridges presents to the eye the usual appearances of normal dermal tissue. The ridges themselves are of a uniform vivid-pink colour, but their surfaces are intersected by minute white lines. The florid pink line of the ridges terminates with their circumferential margins; a distinct line of demarcation, so far as colour is concerned, exists between their bases and the surface of the adjoining skin. Pressure causes the redness to disappear temporarily. In addition to the keloid folds just described, there are scattered over the integumentary surfaces numerous thin, shining, corrugated patches, closely resembling the cicatrices left by burns. These appearances mark the situations where bands of the pink kelis formerly

existed, but which have gradually lost their active character, and subsided into these apparently permanent cicatricial-like residues.

When examined by touch, the keloid bands, on laying hold of them laterally and slightly raising them, are felt to be firm and elastic, and have apparently a fibro-cartilaginous consistence; on the other hand, when passing the fingers over their surfaces, the sensation given is that of velvety smoothness. The facility with which they can be moved to either side, and with which they are seen to participate in the motions of the skin, prove that they have no deep-seated connexions. They convey the idea of being thickened hypertrophied folds of dermis, distinct from the areolar tissue lying beneath. The pressure made in the examination by the fingers does not appear to cause any abnormal sensation of pain or tenderness; sensibility of the surface is, however, perfect. The growth has never caused pain, apart from the irritation and itching which have always been present in hot weather. The muscular movements of the body have never been impeded by its development.

The patient complains of more or less sensation of heat in the parts of the cutaneous surface marked by the disease, and on placing the hand upon these parts a certain increase of temperature is perceptible. A sensitive thermometer, which, when placed under the tongue, rose to 97° Fahr., and in the axilla to 94·5° Fahr., indicated 91° Fahr. as the mean temperature of the diseased surface, while that of the normal portions of the integuments was only 89·5° Fahr. The function of perspiration does not seem to be impaired; the surfaces of the keloid ridges are perceived to be as moist as those of the sound skin.

When the disease is observed with an ordinary magnifying glass, the prominences present nothing peculiar. They have a highly vascular appearance, and are intersected by minute, white, fibrous-looking lines.

The chief features of the disease in this case having been described, it remains only to say that various remedies, both constitutional and local, were tried without producing any

marked effect upon the disorder. Constant attention to cleanliness, so as to prevent accumulation of sebaceous secretion or dirt in the depressed interspaces, and the application of cooling lotions, allayed the irritation which accompanied the disorder, especially when the atmospheric temperature was elevated, but nothing appeared to exert any influence either in checking the spread or promoting the absorption of the characteristic keloid growths. The patient was discharged as a pensioner from the army, and proceeded to reside in Glasgow at the end of June last (1862).

Remarks.—The description of the two cases has been given so fully that very little more remains to be said. The peculiar characters of "kelis," as first described by Alibert, were so strongly marked in these two instances, that it was impossible to confound the disease with any other cutaneous affection; and one is at a loss to understand how its existence as a distinct malady could have been ignored by Bateman, and other authorities. But whether the genus "keloid" offers characters distinct and varied enough to warrant its division into two species—the first, "true keloid;" the second, "keloid of Alibert" (false or spurious keloid)—is a subject which fairly admits, I think, of discussion. No two more striking examples of the two species, if they be admitted to be distinct species, could be found than the cases I have brought to the notice of the Society. The larger, flattened, isolated tumour, in the one case, following the irritation of flogging, forms at first view a remarkable contrast with the cicatrix-like bands and depressions dispersed so extensively through the dermal structure in the other. But do not the two cases present evidences of their being simple varieties of the same disease, dependent upon the same keloid constitution, if I may so express it, of the dermal tissue, their different features depending solely upon the differences in the exciting causes? It appears to me that there are evidences of such

varieties; and that the keloid constitution,[1] whatever that may be, existed in the patient in whom the disease was excited by the flogging, is rendered manifest by the slightness of the punishment in the first instance; by its non-development until a considerable period (nearly three months) after the immediate effects of the punishment had been healed; but more particularly by the small keloid spots in the favourite habitat of this affection, viz., the skin covering the anterior part of the chest. The term "spurious keloid" would scarcely be justifiable in such a case. It is equally evident that in the second case a similar constitutional tendency existed; for of all the men of the Queen's troops then in India, and subjected to the same solar influences, the disease was developed in him alone. Had there been any other instance, the subject of it would have equally had to be invalided from the army. The extensively diffused character of the keloid affection in this latter case was probably due to the equally diffused irritation of the "lichen tropicus" to which the man was subjected. It is curious that two cases of "kelis" after flogging should have happened to fall to the notice of my colleague, Professor Maclean; as I have in vain searched for any other example of the disease among the records for several years past of the invaliding hospital at "Fort Pitt" than the one I have just described.

It will not escape notice that the "lichen tropicus" which preceded the appearance of the kelis in the soldier who was invalided from India, is a feature which corresponds very

[1] Dr. W. J. Burnett, of Boston, has recorded an instance in which the disease seemed to descend from a father to his children ('American Journal of Medical Science,' new series, xxvi, p. 370, quoted by Dr. Wood). Dr. Wood regards the keloid growths occasionally developed in the cicatrices of ordinary ulcers, not as a spurious keloid, but as a true keloid growing thus in a person constitutionally predisposed (Wood's 'Principles and Practice of Medicine,' vol. ii, p. 457). Dr. Bennett gives an instance of keloid growths in the cicatrices of *syphilitic* rupia ('Principles and Practice of Medicine,' p. 950). In this case, had the cicatrices resulted from any other cause, it is only reasonable to suppose they would have been equally followed by kelis.

closely with the pricking and itching sensations described as an accompaniment of the disease from its onset, by some of the patients in whom the disease has been developed in our own country.

There is one point which seems worthy of notice, as bearing on the subject of treatment. Mr. Erasmus Wilson mentions that in a case which he brought to the notice of the late Mr. Key, gradual pressure was recommended as a mode of treatment, with a view to promote absorption, and that it proved fruitless.[1]

Dr. Rayer had recommended the same remedy. In the first case which I have brought to the notice of the Society, it would appear as if the pressure of the leathern belt, after the return of the man who had been flogged to his ordinary duty, was one cause which assisted in the development of the keloid tumour. In the second case also, the radiciform processes were most prominent and closest together in the neighbourhood of the left shoulder, where the pressure of the belt was chiefly exerted. These observations would be further arguments against resorting to pressure as means of cure. The proper mode of treatment is still a desideratum. None of the remedies employed in the two cases detailed appeared to exert any beneficial influence. Alibert relates that in the cases in which extirpation by the knife or destruction by caustic appliances have been resorted to, the operations have wholly failed; and it appears to me that such a result might be anticipated from studying the nature of the malady and its causes.

A stereoscopic photograph of the keloid growth in the case of Edwards is preserved in the collection of the Society.

[1] 'Portraits of Diseases of the Skin,' 1855, by Erasmus Wilson, F.R.S. ("Kelis.")

DESCRIPTION OF PLATE IV.

The case of Private Robert Macfarlane, 2nd Dragoon Guards.

Fig. 1.—The keloid disease as it appeared upon the left humeral and scapular regions.

Fig 2.—The keloid growths in the same case, as they appeared upon the chest and epigastric region.

Fig. 2.

G.H.F.

Fig. 1.

W.West imp.

ON A REMARKABLE CASE

OF

LESION OF THE MEDULLA OBLONGATA;

WITH REMARKS, &c.

BY

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Received March 21st.—Read April 28th, 1863.

The important bearings of the following case on the views of physiologists with reference to the functions of some portions of the nervous centres, appear to me to render it desirable that the case should be brought under the notice of the Fellows of this Society. For the opportunity afforded me of seeing the patient, herein referred to, during life, and of carefully examining the injured parts after death, I am indebted to my colleague, Mr. Hakes, one of the surgeons of the Liverpool Northern Hospital, under whose care the man was admitted, and at whose request I saw him. Mr. Hakes also placed at my disposal some notes he took of the patient; and the structures which were the seat of the lesion are now in the museum of the Royal Infirmary School of Medicine.

John McB—, æt. 23, a seaman, was admitted into the Liverpool Northern Hospital, about noon of the 19th February, 1863. He was in perfect health on the previous day, when, whilst at work on board his ship, he was struck on the left side of the face by a capstan bar. The exact time at which the accident occurred is not known; the blow lifted him from off the deck, and he fell on his back. He was stunned for a short time, but soon recovered. No history was obtained of what took place between the time of the injury and 12 o'clock on the following day, when he applied for admission into the hospital, and walked into the institution leaning on the arm of a man on either side of him. He was immediately put to bed, and shortly after, on paying my visit to the hospital, I was requested by Mr. Hakes to see him.

The following are the symptoms which were noted by Mr. Hakes, the two house surgeons, and myself.

The patient was well made, and tolerably muscular; he was lying in bed on his back; he was perfectly conscious, understood everything that was said to him, and answered questions rationally and distinctly; the articulation was not, however, quite perfect. He complained of slight dizziness of the head, and of a slight numbness of the right side of the face and of the right arm and leg. He was unable to swallow, and had constant hiccough; the face was dusky, the breathing quiet, and the pulse 100 and regular. The tongue was protruded in a straight line, but the uvula was found on examination of the mouth to be drawn towards the left side of the fauces.

There was partial loss of power of the right side of the face, and of the right arm and leg. Both these limbs, however, could be readily raised, but not so easily as those of the opposite side. He could open and shut both eyes at will; the pupils were rather more than normally dilated, they acted irregularly, and the eyeballs were constantly oscilating. No affection either of vision or of hearing was complained of.

A careful examination of the surface of the body revealed the following facts, which were observed by all present. The right side of the face, the right arm, and the right leg were sensibly of higher temperature than the same parts on the opposite side. The patient said he could distinctly feel when touched on either foot, leg, or arm, or on either side of the face. It was thought that sensation was slightly less perfect on the right side than on the left, but on both sides it was good.

The patient being unable to swallow, and having been without food for many hours, some beef tea was introduced into the stomach, but was almost immediately rejected. He continued without material change till about 5 o'clock p.m., when, having asked for some water, he sat up and attempted to swallow it; the attempt was unsuccessful. Whilst sitting up he fell back in the bed, and died somewhat suddenly, having survived the accident about twenty-four hours.

An examination of the body was made twenty hours after death.

There was no fracture of any part of the cranial bones nor of any of the vertebræ. The substance of the cerebrum was perfectly healthy, and no extravasation was anywhere found; its cavities were free from fluid effusion, and the nerves arising from the base of the brain, except as will be hereafter mentioned, were uninjured. There was a considerable quantity of slightly coloured fluid at the base of the skull, and in the spinal canal. The venous sinuses of the head were much gorged with blood, which flowed very freely when these vessels were divided.

The base of the brain, the cerebellum, with the medulla oblongata, and a portion of the spinal cord, were carefully removed. The right hemisphere of the cerebellum was found slightly lacerated on its under surface, close to the side of the right restiform body. This laceration was very superficial. The medulla oblongata, at its posterior aspect and right side, was the seat of an extravasation of blood lying beneath the pia mater and in the substance of the medulla. The extravasation extended, but not continuously, for about

an inch and a quarter, downwards; it was connected with two lacerations of the nervous structure. The parts were placed in spirit and left for future examination.

When the brain substance was somewhat hardened, and a careful examination was made, the upper of the two lacerations referred to was found to involve the right restiform body, which structure was divided transversely about its middle. The laceration extended to within a very short distance of the median furrow of the fourth ventricle behind. To the outer side, and in front, the laceration extended as far as the line of origin of the eighth pair of cerebral nerves. Blood was effused between the lacerated parts, and the adjacent nervous substance was infiltrated with blood. The median furrow of the fourth ventricle was pushed a little towards the left side. As far as it was possible to judge, this laceration involved the whole, or very nearly the whole, of the fibres of the restiform body and a portion of the gray matter spread out on the floor of the fourth ventricle.

None of the roots of the eighth pair of nerves were torn, but the laceration extended close to the superficial origin of the glosso-pharyngeal and par vagum, and no doubt involved their deep fibres.

The second or lower laceration was situated just below, and to the right of, the nib of the calamus scriptorius, and was a little more than half an inch below the upper laceration. It had divided that part of the medulla which is known as the posterior pyramid and the tract outside it, which is the continuation of the posterior column of the spinal cord. The laceration extended about one sixth of an inch into the nervous substance. It stopped behind at the median fissure, and externally it did not extend beyond the line of attachment of the posterior roots of the spinal nerves. Blood was effused at the seat of this laceration as at the superior one, but in much less quantity; the lesion was altogether of smaller extent than the other.

These two principal lacerations were connected by a vertical one, which ran down from the upper lesion along the inner side of the restiform body until it terminated below

by joining the lower laceration; this was also the seat of effused blood.

The heart and lungs were examined. The former was healthy, the latter were found loaded with very dark blood; no difference was observable in this respect between the two lungs.

Remarks.—The interest of the preceding case lies in the fact that the parts of the nervous centres which have been supposed by many physiologists to be the channels through which sensitive impressions are conveyed to the sensorium, were divided on one side, without loss of sensation following. The division of the restiform body was so complete, that it can scarcely be said that any portion of it remained untorn; so that, even admitting that the inferior laceration did not completely divide the continuation of the posterior column of the cord, although it is probable that but few fibres remained intact, the division of the tract higher up was almost, if not entirely, complete.

The case presents us with a repetition on a healthy man of those experiments, so frequently performed by the physiologist on the lower animals, where the posterior columns of the spinal cord, or the restiform bodies, are divided for the purpose of ascertaining the conditions which result. Had the parts been divided with the knife, they could scarcely have been made to involve the injured portions, without encroaching on other parts, more completely than in this accidental lesion.

The results of the case are directly opposed to the theory which has been supported by many eminent physiologists, that the posterior columns of the cord and their continuations, the restiform bodies, are the tracts by which sensitive impressions are conveyed from the posterior roots of the spinal nerves to the sensorium; and they tend to confirm in a remarkable manner the views of several recent physiologists that no such function is performed by these parts. Unfortunately, as far as I could see, the case does not give us any clue as to what the function of these nervous tracts

is; the results are of a negative character, not the less important, however, as affording a support for theoretical views founded on experimental inquiry on the lower animals and pathological observations on man; and although the case is not of such a nature as to enable us to establish a positive doctrine of the function of the injured parts, it may help to clear up any doubt which may still exist as to their supposed function, and thus assist in the attainment of the truth.

With regard to the minor symptoms of the case it is remarkable how they, for the most part, agree with the lesion of nerves which was found after death. So severe a laceration of the restiform body could scarcely have happened without involving the origin of the facial, the glosso-pharyngeal, and pneumogastric nerves. The injury to these nerves satisfactorily accounts for the paralysed condition of the right side of the face and soft palate, for the inability to swallow, and the constant hiccough, which latter is probably referable to the lesion of the pneumogastric.

The immediate cause of death I have not been able to satisfy myself about, but from the testimony of those who were present—the nurse of the ward and others—a somewhat sudden arrest of the function of breathing seems to have occurred.

Hyperæsthesia has been described as following experimental divisions of the restiform bodies and the posterior columns of the spinal cord: no such condition was observed in this case.

DESCRIPTION OF PLATE V.

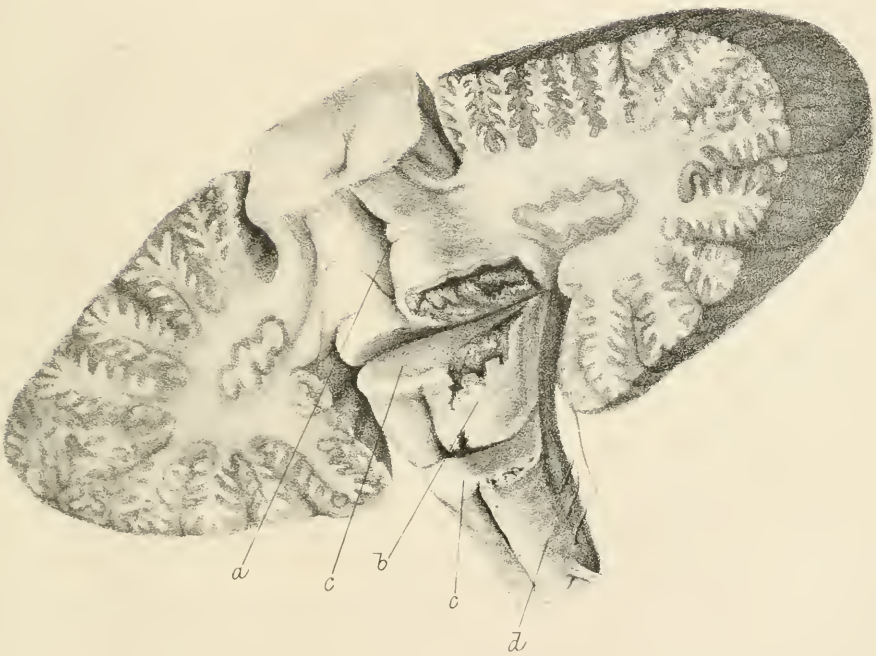
Posterior view of medulla oblongata with the cerebellum divided.

a. Posterior median fissure of medulla oblongata.

b. Right restiform body.

c, *c*. Incisions carried through the back part of the medulla on a level with the lacerated parts.

d. Right posterior column of cord.



F.D.Fletcher del. G.H.F.

W.West imp.

A CONTRIBUTION

TO THE

PATHOLOGY OF THE CRURA CEREBRI.

BY

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Received Jan. 31st.—Read April 28th, 1863.

Affections of the crura cerebri are on the whole of rare occurrence, and especially those which are uncomplicated with other affections of the brain and medulla oblongata, and which thus throw light on the functions and pathology of this portion of the brain. I, therefore, venture to communicate to the Society the following case of hæmorrhage into the left crus cerebri, and will afterwards compare the symptoms with those observed in similar cases, and with the results of vivisections.

Summary.—C. L—, a man, æt. 52, affected with disease of the aortic valves, and rigidity of the arteries, had headache and disturbed sleep during the last years of life; was about two months before death, suddenly seized with paralysis of the right side of the body, and of the muscles supplied by the third nerve of the left side; died of broncho-pneumonia, especially of the right side, after slight but perceptible improvement in the phenomena of paralysis.

Post-mortem examination.—Hæmorrhage into the internal

and inferior portion of the left crus cerebri, with partial degeneration of the third left nerve.

C. L—, æt. 52, a temperate man, of sedentary habits, had in his fortieth year severe rheumatic fever, since which time he frequently felt shortness of breath, and palpitation of the heart. During the last two or three years of his life he suffered occasionally, for days, from headache, and often had tinnitus aurium; but not to such a degree as to render him anxious. The sleep, too, which formerly had been sound, was of late often disturbed by anxious dreams.

On May 8th, 1862, soon after a moderate dinner, and immediately after having returned from a short walk, and having sat down on a chair, he felt suddenly giddy and faint; he said this in a rather indistinct voice to his wife, who "saw him get up from the chair with a pale and ghastly appearance, and in the same moment fall down on his right side." The wife at once endeavoured to raise him, but he again would have fallen, if she had not supported him "For a few minutes he seemed unconscious, and unable to speak in an intelligible manner, but he soon recognised those around him, and spoke distinctly, although his voice was rather thick. The face looked strange, the mouth was all on the left, and the eyes turned in different directions."[1]

After a few hours the patient was seen by Mr. Stuckey, of Wellclose Square, who found him perfectly conscious, and noticed a complete paralysis of the right side from the face to the toes, ptosis of the left upper eyelid, and squinting; the pulse weak and irregular. Mr. Stuckey ordered the patient to be kept perfectly quiet, and gave him draughts of citrate of ammonia. On May 9th, the bowels being costive, he gave, in addition, six grains of Pilul. Coloc. comp., with four of Pil. Hydrargyri.

On May 10th, I saw the patient in consultation with Mr. Stuckey, and took the following notes.

[1] The words between the inverted commas are, as nearly as possible, those of the wife, an intelligent woman, when she related to me the occurrence in the presence of Mr. Stuckey.

Patient is of middle stature, good muscular development, of rather dark complexion, and pale. Posture on back. Face considerably drawn to the left, the right side hanging and almost motionless. Drooping of the left upper eyelid, and distinct squinting. A more accurate examination of the eyes shows that the right obeys the will, while the left is entirely motionless except in two directions, viz., in the horizontal direction from inwards outwards (the movement being very limited, as the cornea even in the state of rest is turned outwards), and round its own axis, in such a manner as to move the white from the outer corner upwards, from above inwards, from the inner corner downwards, and from below outwards, but not in the opposite way, or in other words, from outwards upwards, but not downwards. The cornea of this eye (the left) is always turned perceptibly towards the external corner, and can by no force of the will be turned either to the centre, or upwards, or downwards. There exists, therefore, on the left side paralysis of the third nerve, with immunity of the fourth and sixth nerves.

Both pupils are rather wide; the left is however much wider than the right; both contract imperfectly under the influence of light, the left much more so than the right.

The vision with both eyes combined is not always correct. He relates himself that, since the seizure, most objects of moderate size have a kind of shadow at their left side; that small objects appear sometimes double, the image to the left being, however, much dimmer than the other; and that, when he looks more attentively at the object, the shadow or the second image disappears. Some experiments made by Mr. Stuckey and myself proved this description to be correct, and showed in addition that the error in vision occurred only in looking at objects in a certain distance, while the same objects when moved farther away, or nearer to the eyes, were seen correctly. Thus, a large pin hung up in the distance of about a foot from the middle line, was repeatedly seen double, with the dimmer object to the left, but when held up in a greater distance, or nearer to the

eyes, it was always seen as only one object, and even in the distance of a foot it was seen single, as soon as the patient concentrated his attention on it.

Vision with the right eye alone is perfect; with the left eye alone it is less good; but yet print in moderately large characters is easily read when held at a certain distance. The range of distinct vision is much smaller for the left eye than for the right. Before the seizure both eyes had been, according to the patient's assurance, equally good.

The tongue, when protruded, points to the right side; the right half is furred, the left almost clean. The uvula is drawn to the left; the right half of the soft palate is pendulous.

The senses of smell, taste, and hearing are unaffected.

The sensibility of the right half of the face is much less acute than that of the left.

The right arm and leg are perfectly motionless, and their sensibility is very dull. The patient feels the paralysed limbs warmer, but to the hand no difference between the right and the left side is perceptible.

The muscles of the right side of the thorax, although not paralysed, act less vigorously under the influence of the will, than those of the left. Thus the left side measures from the middle of the sternum across the nipple to the spine after expiration 44½ centimeters (about $17\frac{5}{10}$ inches), and expands during deep inspiration to 47½ centimeters ($18\frac{7}{10}$ inches); the right side, measured in the same manner, yields after expiration 45 centimeters (about $17\frac{7}{10}$ inches), and expands during a deep inspiration to scarcely 47½ centimeters (not quite $18\frac{7}{10}$ inches).[1]

The mental conditions are otherwise normal, but the sleep is much disturbed by anxious dreams. A dream

[1] The measurement was taken five times, and the expansion by a deep inspiration was always greater on the left side; the average difference was rather more than ½ centimeter (rather more than $\frac{3}{10}$ths of an inch), the minimum being $\frac{1}{4}$th, the maximum rather more than $\frac{3}{4}$ths centimeter. During calm (involuntary) respiration no difference was perceived in the expansion of the two sides during inspiration, 1½ centimeters (about $\frac{6}{10}$ths of an inch) being the average expansion of either side.

which almost regularly recurs is that of falling from a great height.

Deglutition normal; the action of the intestines is very sluggish; the bowels, which formerly had been regular, have not been moved since the day before the seizure, in spite of strong aperient medicines administered during the last two days.

The phenomena of respiration are normal in both lungs.

The examination of the præcordial regions manifests the signs of old disease of the aortic valves with hypertrophy of the left ventricle; the arteries are rather rigid; the pulse is 62 to 65 per minute, rather irregular, and has the jerking character peculiar to insufficiency of the aortic valves (regurgitation).

Micturition is unaffected. The urine is passed in moderate quantity, is acid, of high specific gravity (1030), deposits lithates, and contains neither albumen nor sugar.

Treatment.—Rest of mind and body. Head in raised position. Moderate amount of easily digestible food.

Pilul. Colocynth. comp. gr. x, ad gr. xv nocte, si opus sit.

On May 13th, I saw the patient again, and found the general health, the action of the heart, the lungs, the kidneys, and the skin, as on the 10th; the obstinate constipation continued up to this morning, when the bowels were moved for the first time, and only once, after fifteen grains of Pilul. Colocynth. comp. administered last night, and three ounces of Infus. Sennæ comp., with a drachm of sulphate of magnesia given early this morning. The tongue when protruded pointed still to the right, and the fur was limited to the right half. The muscles of the right side of the face were rather less relaxed than on the 10th; the action of the muscles of the left eye unchanged; that of the right arm and leg scarcely improved, the expansion of the right side of the chest, too, manifested still the same defect. The patient complained of spasm in the right leg, and especially in the great toe; all the toes were in a state of extension, but the great toe was most drawn back, and it required some

force to bend them; there was, on the whole, some degree of rigidity in all the muscles of the right arm and leg which, however, became only perceptible when we tried to bend and extend them.

With regard to sensibility, the difference between the two sides, measured by Sieveking's aesthesiometer, was as follows. The distance of the two points necessary to cause distinct perception was,

	On the left side.	On the right side.
Chin	$\frac{3}{10}$ in. (7·6 mm.)	$\frac{6}{10}$ in. (15·2 mm.)
Middle of the cheek	$\frac{5}{10}$ in. (12·7 mm.)	$\frac{9}{10}$ in. (22·8 mm.)
Point of the index finger (palmar surface)	$\frac{1}{10}$ in. (2·54 mm.)	$\frac{4}{10}$ in. (10·1 mm.)
Middle of the back of the hand, longitudinal diameter	$1\frac{3}{10}$ in. (33·0 mm.)	4 in. (101·6 mm.)
Middle of the back of the hand, transverse diameter	$\frac{6}{10}$ in. (15·2 mm.)	$1\frac{3}{10}$ in. (33·0 mm.)
Middle of the back of the foot, longitudinal diameter	$1\frac{6}{10}$ in. (40·24 mm.)	Over 4 in. (over 101·6 mm.)
Middle of the back of the foot, transverse diameter	$1\frac{1}{10}$ in. (27·9 mm.)	$3\frac{3}{10}$ in. (91·6 mm.

The sensibility was tested on several other points of the limbs, and was everywhere found at least three times less acute on the right side than on the left. There was also a marked difference between the two halves of the trunk, but less great than between the limbs. If this examination had been made on the first day after the seizure, the difference between the two sides would probably have been much greater, as it appeared, not only to Mr. Stuckey and myself, but also to the patient, that some improvement had taken place in this respect during the last days.

Again the patient mentioned that he felt the right arm and leg warmer than the left; and although there was scarcely any difference perceptible to the hand, yet, by means of a finely divided thermometer (of Geissler in Berlin) the temperature in the right axilla, and in the bend of the elbow, was found 0·5° Centigrade (0·9° Fahr.) higher than in the same places of the left side, both arms having been covered in the same manner before the examination. In the right axilla the temperature was 37·0° Centigrade (98·6° Fahr.), in the left 36·5° Centigrade (97·7° Fahr.); in the bend of the elbow the figures were slightly lower.

The left pupil is about three times as wide as the right, the diameter of the latter appearing now quite normal, or even slightly narrower than usual; the contraction of the left pupil is less perfect than that of the right.

The vision, with both eyes combined, is less disturbed than it had been at first; there is now no double vision at all, and only rarely a shadow, although the axes of both eyes still diverge almost as much, if not quite as much as on the 10th. The vision with the left eye alone is still rather "hazy" and inaccurate, except for large objects and for certain distances; the accommodation with the right eye appears much more rapid and perfect than with the left.

Treatment—as before, substituting only Pilul. cambogiæ comp., for Pilul. Colocynth. comp.

On May 25th the face, with the exception of the eyes, is almost symmetrical when at rest, but when animated, as in conversation, the right side moves less than the left; the tongue is protruded almost in the middle line, pointing only slightly to the right; the fur on it is much more equally distributed; both sides of the soft palate are almost equal. The muscles of the left eye supplied by the third nerve are but slightly more active than they were on the 10th; the squinting is still quite distinct, although rather less so than before.

Has had repeatedly, during the last eight or ten days, a dull but not violent pain in the left temple and forehead; is now free from it.

The paralysis of the limbs as to motion is just perceptibly diminished, the patient being able to move the fingers and toes slightly; there is still some rigidity in the muscles of the right side; the muscular irritability, tested by electricity, seems rather greater in the paralysed than in the sound limbs, but the difference, if any, is scarcely perceptible.

The sensibility in the paralysed side is decidedly improved. The distance of the points necessary to cause distinct perception, is—

	On the left side.	On the right side.
Chin	$\frac{3}{10}$ in. (7·6 mm.)	$\frac{5}{10}$ in. (12·7 mm.), had been $\frac{6}{10}$ in. on May 13th.
Middle of cheek	$\frac{5}{10}$ in. (12·7 mm.)	$\frac{7}{10}$ in., or rather more (18 mm.), had been $\frac{9}{10}$ in. on May 13th.
Point of index finger, palmar surface	$\frac{1}{10}$ in. (2·54 mm.)	$\frac{3}{10}$ in., or rather less (about 7 mm.), had been $\frac{4}{10}$ in. on May 13th.

No difference is perceptible, by the thermometer, in the temperature of both sides. The bowels are still very costive.

The patient continued, according to Mr. Stuckey's report, to improve steadily, though slowly, in every respect, until about five weeks after the last report, when he was suddenly seized with rigors, followed by the symptoms of pleuro-pneumonia of the right side, and died eight days later before I had seen him again. The phenomena of the paralysis had not been perceptibly affected by the last illness.[1]

Post-mortem examination.—Thirty-four hours after death. Cadaveric rigidity on both sides slight. The muscles of the limbs of the right side thinner than those of the left; no marked difference between both sides of the trunk.

The abdominal organs offer nothing abnormal.

The right lung is adherent by fresh layers of lymph, and there is about half a pint of sero-purulent effusion in the right pleural cavity; the greater portion of the same lung exhibits the phenomena of recent broncho-pneumonia. The upper lobe of the left lung is normal, the lower lobe is congested, and a small portion of it shows likewise traces of broncho-pneumonia. The left ventricle of the heart is much hypertrophied; the aortic valves are considerably thickened and rigid (stenosis and insufficient closure); the lining membrane of the aorta contains many atheromatous spots; the anonymous trunk, carotid, subclavia, and aorta descendens are felt on several spots thickened and rigid.

The cranium, dura mater, and arachnoid membrane

[1] It ought to be mentioned, that the patient had been in the habit of riding in an open carriage during the last eight or ten days before the appearance of the inflammatory chest symptoms, and that the latter first manifested themselves three days after a long drive, when the patient had felt chilly.

are normal. The subarachnoid serosity is slightly increased in quantity, it occupies the intergyral spaces, and scarcely raises the arachnoid from the surface of the convolution; it is almost equally distributed over the convex surface of the hemispheres and over the base, and is quite transparent. The pia mater contains a moderate quantity of the just described fluid in its meshes, and is everywhere easily separable from the brain without any loss of substance. The sinuses of the dura mater contain a moderate amount of slightly coagulated blood.

In examining the base of the brain, the basilar artery is found to be rather rigid, and to contain several atheromatous spots; and a similar condition is met with in the cerebral portions of the internal carotid, and also in the middle and posterior cerebral arteries of the left side. The substance of the hemispheres, and of their ganglia and commissures, the ventricles, and their contents, offer nothing abnormal.

The left crus cerebri looks very slightly fuller than the right, the colour being, however, scarcely different in both; the third nerve of the left side is just perceptibly pushed towards the right. In making a horizontal section through the centre of the lower part of the crus, an oblong clot of blood is discovered in its internal half, which clot is about 0·6 inch (15·0 mm.) long, about 0·25 inch (6·3 mm.) broad, and almost as deep; it is situated very close to the internal and inferior surface, being separated from it by only a thin layer of nerve-substance; its commencement is immediately in front of the pons. (The accompanying sketch shows the situation and outlines of the clot.) The blood is of dark colour and rather dry, *i. e.*, less fluid and soft than a newly formed clot. The surrounding tissue is tinged yellow to the depth of about $\frac{1}{15}$ inch (1·8 mm.), and more tense than the remainder of the substance of the crus. No membrane can be recognised round the clot. To the naked eye there is no difference in the appearance of the third nerves of the two sides. Both optic nerves look quite natural.

The microscopic examination of the clot manifests many shrivelled blood-globules, besides many apparently unaltered

ones. The surrounding yellowish and tense tissue contains scarcely any nerve-fibres, but much connective tissue. In the left third nerve many oil-globules, and granules of various size, and also small granular corpuscles, are found, which are absent in the right nerve; the nerve-fibres in the left nerve are scanty and broken down. No difference is found in the microscopic appearance of the optic nerves of both sides.

The cerebellum, the corpora quadrigemina, the pons and medulla oblongata, offer nothing abnormal.

With regard to the Diagnosis, this case belongs to the rarer class of cerebral affections, in which an almost accurate diagnosis is comparatively easy. Sudden paralysis of the right side of the body, with immunity of the mental faculties and special senses, and paralysis of the third nerve of the left side, were the prominent facts, pointing unmistakably to an affection near the base of the left hemisphere and near the origin of the third nerve. The fact that none of the other cerebral nerves of the same side was affected, demonstrated that the morbid condition was confined to a small spot. I thought at first of an aneurism close to the inner side of the left crus, but the circumstance that the paralysis of the right side was so complete, soon rendered it more probable that some hæmorrhage or other morbid process had taken place within the substance of the crus cerebri; and the bursting of a blood-vessel externally to the crus appeared still more unlikely by the consideration that it would most likely have caused a more extended injury to the nerves situated at the base of the brain. The existence, however, of the aortic disease, and of the rigidity of other arteries, recognised during life, rendered the disease of the cerebral arteries, and therefore that of hæmorrhage, more likely than that of other cerebral affections.

Such accuracy of diagnosis in cerebral diseases is, however, unfortunately but seldom obtainable, and almost only in morbid conditions situated near the base of the brain, where they interfere not only with the conducting or transmitting function of the large tracts of nerve-fibres contained

within the medulla oblongata and its cerebral expansion, but also with that of the cranial nerves issuing from the base of the brain, and thus cause what the French call, I believe, "*paralysie alterne,*" i.e., paralysis of one side of the body (side opposite to the lesion), and of one or several cranial nerves on the other side (side of the lesion). Griesinger's remarks on the diagnosis of cerebral diseases contain much valuable information on this point.[1]

With regard to the pathology of the crura cerebri the case before us is especially valuable, because the alteration is of limited circumference, and is uncomplicated with any other morbid condition of the brain. In considering the principal symptoms we must bear in mind that the clot occupied a great portion of the internal and inferior part of the left crus, and thus paralysed its function, while the external and upper part appeared unaltered. The symptoms in question were: Total immunity of the intellectual faculties, with the exception of the first moments after the seizure, when the transitory loss of consciousness was, no doubt, due to the general shock, and not to the local affection; almost total paralysis of the limbs of the opposite side as to motion, and considerable impairment as to sensation; imperfect, and less persistent paralysis of the muscles of the trunk and of the fifth, of the pars dura of the seventh, and of the ninth cerebral nerves of the same side; the affection of the pneumogastric nerve manifested itself in the more than usually slow and irregular action of the heart during the first days after the seizure; to the impaired action of the same nerve, combined with that of the sympathetic, I am inclined to ascribe also the production of, or at all events the disposition to the broncho-pneumonia, and pleuritis appearing two months after the hæmorrhage, the more so, as the right side was the one principally attacked; the participation of the sympathetic nerve was further manifested by the increased temperature of the paralysed side. On the side of the lesion we have the paralysis of the third nerve, causing, in

[1] "Diagnostische Bemerkungen über Hirnkrankheiten," in 'Archiv für Heilkunde,' vol. i, 1860, p. 51.

addition to the strabismus, some interesting phenomena of vision which I shall not endeavour to analyse at present; there was, besides, an occasional pain in the temple, but this was but moderate, and appeared only after the first week.

In searching for instances of disease of the crura cerebri published by others, I have met only with few uncomplicated cases, although I will by no means assert by this that our literature does not contain others besides.[1]

A very important case is furnished by Andral in his 'Clinique Médicale' (Third edition, vol. v, p. 339, 1834).

"A woman, about 60 years of age, came into the 'Hôpital de la Pitié' in March, 1831, with symptoms of chronic peritonitis. She had, besides, hemiplegia of the right side, of four years' standing; the voluntary movement of that side being entirely destroyed, and the sensibility very obtuse. She said that one morning in waking, she found herself thus paralysed, after having been quite well on the previous evening. The face had been unsymmetrical in the beginning. She had no head symptoms either before or after the attack; voice, intelligence, and special senses were normal. Death occurred from peritonitis. The post-mortem examination exhibited a cavity of the size of a cherry, rather oval, filled with a greenish serous fluid, in the middle portion of the left crus cerebri; the cavity was lined with a tense membrane, and surrounded by hard tissue some lines in thickness. The rest of the brain was normal." There were also evidences of chronic peritonitis, and there was sero-purulent effusion in the right pleural cavity. Andral remarks upon the rare occurrence of such lesions, and the fact that symptoms were restricted to paralysis of motion and sensation in the limbs of the opposite side.

[1] In the excellent dissertation of Werner Nasse, "De singularum cerebri partium functionibus ex morborum perscrutatione indagatis" (Bonnæ, MDCCCXLV), I find, in addition to Andral's and Green's cases, two others mentioned; one by Mohr (Casper's Wochenschrift, 1840), the other by Duplay (Archives gén. de Méd., Nov., 1834); but in both cases the lesions were extensive and complicated, and the symptoms not well defined.

The great similarity between Andral's case and the one just related to the Society is self-evident. The absence of the paralysis of the third nerve on the side of the lesion is very natural, as the lesion existed in the centre of the crus, and not near the origin of the third nerve.

In a paper on 'Tubercles of the Brain in Children,' by Dr. P. Hennis Green, published in vol. xxv of the 'Medico-Chirurgical Transactions,' I find the following notes at page 195, under No. 7:

"Le Platu, girl, æt. 3½. Symptoms of two months' duration; headache; stupidity; paralysis of left side; strabismus; constipation; somnolence; lesions: tubercle in the right crus cerebri, with green detritus around; tubercles in chest and abdomen."

The shortness of these notes prevents us from interpreting with certainty the phenomena related in them, but it appears probable that "the paralysis of the opposite side, the strabismus, the constipation, and perhaps the headache," were due to the affection of the crus cerebri, while the "stupidity and the somnolence" may have depended on complications which are so frequent in tubercular affections of children; as, for instance, tubercular meningitis.

Very different from the symptoms observed in these cases of disease in man, are those described as the results of experiments on animals (cats, rabbits, and dogs). Magendie, Lafargue, Longet, Schiff, and others have all found that section of either of the crura cerebri causes the animals to perform circus movements ("mouvements circulaires ou de manège"), although the different observers do not quite agree with regard to the direction of these movements, and the interpretation of the phenomenon. Schiff, who is one of the latest authors on the subject, states that, if the section of the crus cerebri is complete, the circuit is narrow, and the circus movement is persistent, *i. e.*, it can still be witnessed in the second week after the operation, while, if the section is only partial, the circuit performed by the animal is larger, and the animal after a short time again becomes enabled to walk in a straight line ('Lehrbuch der Physio-

logie des Menschen,' von J. F. Schiff, vol. i, p. 343, 1859). The same observer asserts that the section of the crus does not cause any hemiplegia whatever, but that the head and neck turn towards the side opposite to the lesion, as soon as the animal endeavours to move; while when at rest, the head is kept in the middle line, and both forelegs are directed towards the side of the section if the animal attempts to stand on them or to move. To this peculiar direction of the neck and forelegs, Schiff ascribes the occurrence of the circus movements in animals; and if this explanation be correct, the absence of real circus movements in man would be explained by it, as we do not use our arms for walking

Longet and Lafargue likewise assume that the circus movement takes place in the direction opposite to the lesion, but they explain it by assuming imperfect paralysis of the limbs of the opposite side as the cause of it. (Traité de Physiologie, par F. A. Longet, seconde édition, vol. ii, p. 409, 1860.)

With regard to sensibility, Schiff remarks that, in rabbits and cats after the section of the crus cerebri, the head and the extremities of the side of the lesion are much more sensitive than the same parts on the opposite half of the body, and that this greater sensibility does not depend on anæsthesia of the latter, but on hyperæsthesia of the former.

How can we explain, we naturally ask, these differences between the pathological phenomena in man, and the experimental phenomena in animals? It would lead too far to discuss here this often discussed subject. We may say that the pathological lesions in man, and the experimental lesions in animals, are not quite the same; and further that the anatomical and functional relations of the different parts of the brain in man, and in the animals experimented upon, are likewise different; but we certainly ought not to throw away the results of vivisections, when they do not agree with our pathological observations; we ought, on the contrary, to be prevented by them from making premature inferences, and to

be led to further and more careful observations. If this remark is correct with regard to other portions of the brain, it is also most certainly so with regard to the crura cerebri, concerning which our pathological experience is so limited.

It would, however, if we might judge from the cases described, seem probable, but not certain, that any considerable lesion of the centre, the internal and lower portions of the crus cerebri in man (the only parts which were diseased in the three cases mentioned), causes:

1. Almost perfect paralysis of the limbs of the opposite side as to motion, and great impairment as to sensation; 2. Less complete, and only transitory paralysis of the opposite side of the face, leaving, however, the muscles of the eye intact; 3. A similar, but perhaps more permanent impairment of the pneumogastric and sympathetic nerves of the opposite side; 4. A great retardation in the functions of the intestinal canal. 5. The intellectual faculties, and the spinal nerves seem to be altogether independent of the crura cerebri. 6. The third nerve on the side of the lesion (not on the opposite side) seems to become paralysed only in those morbid conditions of the crus which affect the most internal and inferior layers of nerve-substance, close to the place of issue of the said nerve.

With regard to diagnosis, paralysis of the limbs and body of one side, with paralysis of the third nerve of the opposite side, and with immunity of the other cranial nerves of the latter side, and of the intellectual faculties, and spinal senses, may be regarded, with a considerable degree of probability, as pointing to an affection of the inferior and internal part of the crus cerebri, close to the pons, situated on the side of the paralysed third nerve.

Respecting the prognosis, Andral's case, and the one related by myself, show that hæmorrhage into the crus cerebri is not necessarily fatal; but both cases demonstrate also the applicability of the old axiom, that organs entirely or only partially deprived of their normal nervous influence, are more liable to inflammation, and they teach us also that through this liability new dangers in distant organs arise in

cerebral affections, and in diseases of the nervous centres in general. I can scarcely resist finding an intimate connection between the hæmorrhage into the left crus cerebri, and the right-sided broncho-pneumonia and pleuritis, which killed our patient two months after the occurrence of the hæmorrhage, when he was already on the road to convalescence. As to Andral's case, it may perhaps appear rather farfetched if I connect the hæmorrhage into the left crus, and the sero-purulent effusion into the right pleural cavity, and the chronic peritonitis with sero-purulent effusion,[1] met with four years after the hæmorrhage; but the facts that the pleuritic effusion occupied the right side, and the consideration that idiopathic peritonitis is on the whole of rare occurrence, strengthen the opinion that the old cerebral lesion exercised some influence in the origin of these morbid conditions.

This liability to diseases of remote organs ought also to be taken into consideration in the treatment of such cases, by showing us the necessity of avoiding all agencies likely to cause congestion or inflammation of any part of the body. The cerebral affection itself is not amenable to our treatment, which must regard the general health, and the concomitant circumstances of the patient, and will in most cases mainly consist in proper nursing as to rest and diet.

I was on the point of sending my paper to the Society, when I received, through the kindness of the author, the inaugural dissertation of Dr. F. J. Stiebel, of Frankfort, describing a remarkable case of disease of the crus cerebri.[2]

[1] Andral's own words concerning the post-mortem examination of the thorax and abdomen are:

"*Thorax.*—Poumons sains. Epanchement séro-purulent dans la plèvre droite. Coeur normal.

"*Abdomen.*—Liquide séro-purulent dans la cavité péritonéale. Adhérences des anses intestinales par des brides celluleuses encore molles. Pâleur de la surface interne du tube digestif (loc. cit., p. 340)."

[2] Paralyseos hæmorrhagicæ nervi oculomotorii in infante observatus casus rarissimus, Dissert. inaug. medica, quam in Universitate Ruperto-Carolina submittit, F. J. Stiebel, M.D., Francofurti ad Moenam, MDCCCXLVII.

As this dissertation is very little known, I do not hesitate in annexing a description of the case in question.

A girl, æt. 11, habitually subject to attacks of bronchial catarrh, dyspnœa and disturbance of circulation, had suffered in March, 1847, from periodic earache ("otalgia periodica"), but had been cured of it by quinine, and had been comparatively well, when, a few days after exposure to great heat in the sun, she was suddenly, on June 21st, attacked with headache, which disappeared on the following day, leaving her "pale and weak on her legs;" on June 23rd, headache, nausea, slight swelling of the face, pulse 140, very weak, consciousness unaffected; on 24th only moderate headache; on 25th, in addition to violent pain in the left part of the forehead, ptosis of the left upper eyelid, hanging of the left angle of the mouth, dilated left pupil, and photophobia, with undisturbed vision, weak and frequent pulse, nocturnal delirium, absence of paralysis in the extremities; on 26th, headache diminished; ptosis and dilatation of the pupil continue, but angle of mouth not any longer hanging; head always turned to the right; on the 28th, increased headache; towards evening rigors; on 29th, some degree of anæsthesia in the left side of the face, with continued headache, principally in the left supra-orbital region; weakness and frequency of pulse, and costiveness as before; the left upper eyelid is constantly rubbed with the back of the left hand; on June 30th, trismus, and tetanic convulsions of the limbs; death two hours after the accession of these symptoms.

Post-mortem examination.—Brain rather large; on its base, in front of the left side of the anterior margin of the pons, the colour is changed on a small spot from which pus oozes out. The removal of the pia mater, which is otherwise healthy, shows the left crus cerebri just in front of the pons much enlarged and softened; the diameter of the right crus being six, that of the left thirteen lines. The posterior part of the left optic nerve slightly softened and enlarged. In the left crus cerebri is seen an oblong aperture of an abscess or ulcer ("ulcus") which contains good-

looking pus, mixed with grayish-white fibres of softened brain-substance. In its posterior part, near the pons, the ulcer is perfectly circumscribed, while in front it enters a little into the substance of the crus. The third nerve issues about a line distant from the interior margin of the "ulcer," and about five lines more in front than the right third nerve, the structure of the nerve itself being unchanged. The dilatation of the aperture of the "ulcus" shows that its length from the pons anteriorly is nineteen lines, and its greatest breadth fourteen lines. In that part of the "ulcus" which is nearest to the pons, a "focus hæmorrhagicus" is found, about nine lines great ("magnitudine novem linearum"), well circumscribed, grumous, and enclosing a drop of pus. The substance forming the ground floor of this focus is red, and covered with a few red granulations.

The rest of the brain with its ventricles is normal. The organs of the chest and abdomen contain nothing abnormal, with the exception of the heart, which is in the state of concentric hypertrophy.

It is to be regretted that in the description of this most interesting case neither the depth of the "ulcus" or abscess is mentioned, nor the general and microscopic appearance of the remaining substance of the crus. The circumstance, however, that the diameter of the diseased crus was more than twice as large as that of the other side, renders it probable that its structure had been altered, at least for the time, in a great part. This case would, therefore, teach us that a rather considerable portion of the lower part of the crus cerebri may be altered in substance without causing hemiplegia of the opposite side; a fact for which we had been scarcely prepared after having met only with the three cases described in the former part of this paper. The lesion in Stiebel's case does not, it is true, occupy quite the same spot as in the other cases, and the destruction of tissue may have been rather superficial, but the alteration of tissue at the time of death must have been, to judge from the swelling of the crus, much more extensive.

I will not attempt farther to analyse the case, as I have

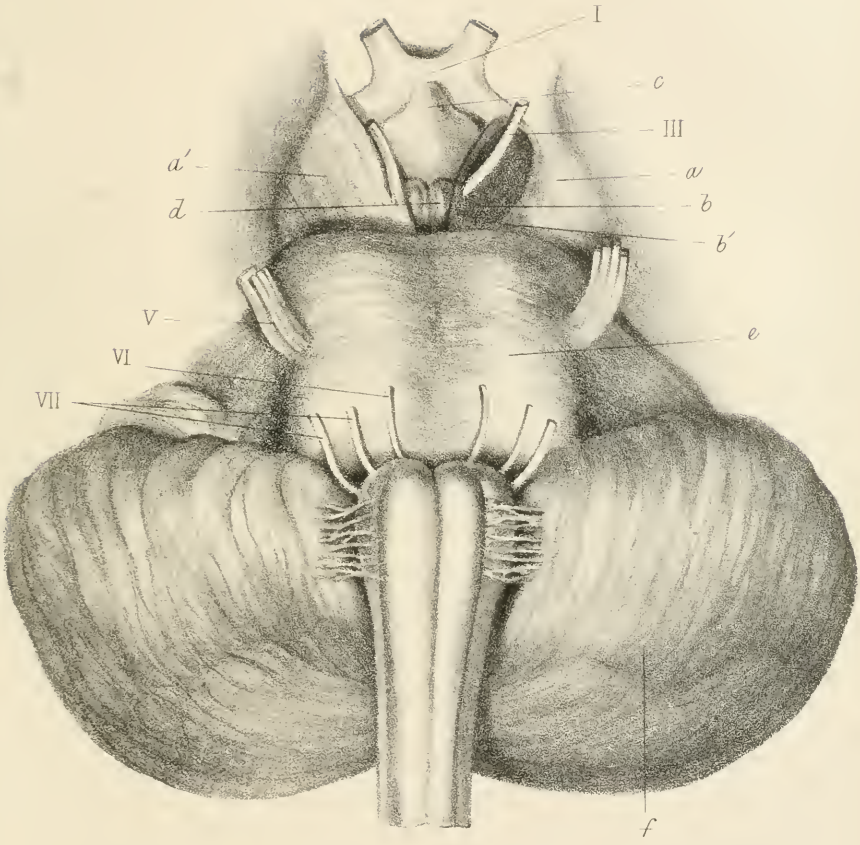
occupied the time of the Society too long already; I may, however, draw attention to the symptom mentioned in Stiebel's case, that the head was always turned to the right, *i. e.*, the side opposite to the lesion—a fact which coincides with the results of vivisections, and which had not been remarked in any of the other cases. I further cannot help pointing out how Dr. Stiebel's case demonstrates the necessity of our guarding ourselves against hasty inferences from a few pathological observations, especially in cerebral affections. Our duty in such cases is carefully to note the symptoms manifested during life, accurately to describe the anatomical lesions found after death, and to compare our pathological experience with the teachings of anatomy and physiology of man and animals. In this manner we may hope to obtain, sooner or later, some insight into the functions of the different parts of the brain, and to learn at the same time to distinguish the real from the apparent symptoms of their lesions.

DESCRIPTION OF PLATE VI.

The crura cerebri and pons varolii, showing the seat of the hæmorrhage in the left crus, in Dr. Hermann Weber's case.

a. Left crus cerebri.
a'. Right crus cerebri.
b. The dark spot showing the outline of the hæmorrhage.
b'. The margin surrounding the dark spot indicating the indurated tissue round the blood clot.
c. The pituitary gland.
d. The corpora albicantia.
e. The pons.
f. The cerebellum.

I. The commissure of the optic nerves.
III. The third nerve.
V. The fifth nerve.
VI. The sixth nerve.
VII. The *pars dura* and *pars mollis* of the seventh nerve.


I
c
III
a′
a
d
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V
e
VI
VII
f

DESCRIPTION OF A FŒTUS

BORN WITHOUT

HEART, BRAIN, LUNGS, OR LIVER.

BY

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Received April 18th.—Read May 12th, 1863.

Through the kindness of Dr. Blakely Brown, the museum of St. George's Hospital has lately become possessed of a human monstrosity, of which a short description may be interesting to the Society.

The being, like all others of the same character, was a twin. The mother, an unmarried woman, pregnant for the first time, was delivered in Queen Charlotte's Hospital. A healthy female infant was first born, the breach presenting. The monster about to be described was then expelled, the shoulders first. The two umbilical cords were attached, an inch and a half apart, to a single elongated placenta, which unfortunately was not preserved. The female child was apparently in good health, and without peculiarity of any kind. It so remained for the three weeks during which it was under observation in the hospital.

The monstrosity, which is represented in Plate VII, was destitute of any vestige of head or neck. The shoulders were united along the central plane into a rounded fleshy surface, without prominence or inequality to indicate the

position due to the neck. The upper end of the fœtus thus terminated much after the manner of an anchor. The upper extremities were present, but were both curtailed, each apparently by one segment. The hands were imperfect. The left was shortened, and the fingers four only in number. On the right hand were five digits, but they were rather irregularly placed. The trunk was small in proportion to the limbs. On its front surface, in the median line, at a short distance from the upper end, was a small prominence of a reddish colour, which, from the fact of its being clothed with papillæ, was believed to represent the tongue. The umbilical cord was surrounded at its origin by a small membranous bag, which contained a coil of intestine and some serous fluid. The genital organs, which were those of a male, the anus, and all other particulars concerning the outside of the trunk, were natural. The lower extremities were only slightly different from their usual state. The right leg seemed somewhat twisted on its axis. On each foot were four toes only.

The body was generally swollen and œdematous, constricted at the joints, bloated elsewhere.

The skeleton of the trunk, where only were the bones examined in detail, was nearly natural. The spinal column was as usual from the beginning of the dorsal region downwards. Of the cervical vertebræ only the two lowest existed. The upper of these was rounded above, and roofed over by membrane. No trace of any of the cranial bones existed. All the ribs were natural excepting the first pair, which were abnormally shortened. The scapulæ and sternum were complete. The clavicles were wanting.

Upon laying open the trunk, great thickness of integument had to be cut through, owing to a general serous infiltration of the areolar tissue. There was no diaphragm. The heart, lungs, thymus, liver, spleen, pancreas, and suprarenal bodies were altogether wanting. The upper part of the alimentary canal was represented by a hemispherical depression upon the chest, of about half an inch in depth, to the deepest part of which a body resembling the tip of

the tongue was attached. The œsophagus, stomach, and the upper part of the bowels were absent. In the abdomen lay the lower two feet, or rather more, of the intestine, commencing by a rounded cæcal extremity. The bowel contained meconium, and appeared in all respects natural as far as it went. It ended in a natural pervious anus. The most conspicuous bodies in the abdomen were a pair of kidneys of very large size, which reached up so as to occupy the lower part of the chest. These were connected each with its own ureter, almost as thick as in the adult, which terminated in a normal bladder. An urachus connected the bladder with the termination of the umbilical cord. Beneath the kidney, on each side, was an undescended testicle. The space between the walls and the organs mentioned was filled with spongy cellular tissue, containing serous fluid.

The umbilical cord contained a large vein and artery, besides a second artery so minute that it was impossible to follow it.

The great artery of the cord divided, on entering the belly, into two large branches, one of which passed into the right thigh, giving an offshoot in its passage, to its own side of the pelvis. The other division served for all the rest of the body. It swept upwards to the position of the aorta, on the left side of the spine, and gave off from adjacent points a large vessel for the left thigh, and another for the left side of the pelvis.

Thence the artery passed upwards, giving large branches for the kidneys, as well as lateral and posterior filaments, corresponding to the lumbar and intercostal vessels. It terminated between the shoulders by dividing abruptly into two large branches, one of which went to each upper extremity.

Tracing the venous system in the same way from the umbilicus, the great vein passed, with a curve undivided, to the position of the vena cava on the right side. It gave first a branch, which passed with the artery to the right thigh and side of the pelvis; then, about half an inch higher up, another vessel, in similar company, for the left

lower extremity. The main vein then passed up along the right side of the vertebral column, giving lateral branches to the kidneys, many smaller vessels corresponding to those of the artery, and ended in the same way by giving off at right angles to itself a large vein for each arm.

The entire encephalon, as well as the upper part of the spinal cord, were wanting. The cord began opposite the last cervical vertebræ by a rounded, somewhat bulbous extremity, which is well represented in the drawing. The nerve roots passed from this much in the usual manner. The upper pair, on each side, proceeded in an upward direction so as to escape above the sixth vertebra. The ganglia on the posterior roots were as usual. Except that the contributions from the fifth cervical nerve was absent the brachial plexus was formed much in the usual way. No peculiarity was discovered in the distribution of the dorsal and lumbar nerves. Those of the sacrum were not exposed by the dissection.

The sympathetic ganglia were large but not numerous. A chain of ganglia, eight in number, occupied the usual position along each side of the spine, scattered over the space from the second cervical to the last lumbar vertebra. Each of the ganglia sent two or more filaments backwards, which united in an irregular manner with the anterior branches of the spinal nerves. These filaments generally diverged, passing one to an upper, one to a lower nerve. At the upper termination of the chain were several large branches of communication with the brachial plexus near its origin. Below were similar branches connected with the lumbar plexus, with which the sympathetic appeared to end. The ganglia were nearly or quite as large as in the adult.

The fœtus unopened (Plate VII), as well as after dissection (Plate VIII), has been very accurately drawn by Dr. Westmacott.

Many abortive productions have been from time to time described, which resemble in all essential points the one under consideration. The laws of mutual dependence which govern such organizations may be as yet beyond our reach, but the Society may deem it worth while to place another instance upon record for the use of future physiologists.

Since there was no communication between the veins and arteries of the fœtus, answering to the foramen ovale, but the veins throughout the body were simply continuous with the umbilical vein, and the arteries with the umbilical artery; it follows that either in the cord, or in the body of the monstrosity, the usual direction of the blood must have been inverted. If it passed as usual from the mother down the umbilical vein, then it must have been continued into the tissues by the veins of the fœtus. On the other hand, if the course of the circulation was not thus reversed in the fœtus, the artery of the cord must have brought the supply from the placenta.

In every cardiac fœtus hitherto described the monstrosity has been a twin, attached, with a perfect fœtus, to a common placenta.

Sir B. Brodie, in a paper upon a similar formation, communicated to the Royal Society expressed his opinion that the circulation was carried on by the action of the vessels, alone. He afterwards, however, assented to a suggestion of the late Dr. Young, that the heart of the companion fœtus served as the motor power, acting through the common placenta. Sir A. Cooper afterwards had the opportunity of examining the vessels both in the body, and in the placenta, of another production of the same kind ('Guy's Hosp. Reports,' vol. i). Both cords were, as is constant in such cases, attached to a single placenta. Upon the surface of this organ were large vessels by which the two cords were united, the vein of the one communicating with the vein of the other, and the arteries of the one with the corresponding vessels in the other. This double anastomosis, as may be noticed in passing, may occur where both twins are natural. There is a preparation in Dr. Lee's collection which shows this. Sir Astley con-

cludes that the artery in the cord of the imperfect fœtus was simply a branch of that belonging to the healthy child, and that it therefore conveyed blood in an inverted direction, i.e., *from* the placenta, while the umbilical vein of the monster brought the return current *to* the placenta. Thus the circulation in the supernumerary growth would appear to be so far normal that the blood would enter it by the arteries, and return by the veins; in the cord only would the blood flow reversely to the ordinary direction.

The invariable attachment of a healthy child to the placenta which is in connection with the acardiac monstrosity argues strongly in favour of Dr. Young's supposition; while the elaborate objections raised to Sir A. Cooper's views by Dr. Houston, of Dublin, appear to admit of considerable question.

Dr. Houston dwells upon the fact that at the placental end of the cord of the imperfect fœtus, certain branches both from the artery and the vein, pass into the substance of the placenta. Now, as there is but one placenta, and that serves for a living and healthy child, it is clear that the circulation in that organ must be natural. The blood must therefore leave it by the veins. The Dublin physician considers it necessary that the umbilical vein of the monster, which is continuous with these branches, should in a similar manner to them, carry its contents away from the placenta. If we hold, with Sir A. Cooper, that the circulation in the cord of the abnormal fœtus is reversed, we must allow that while the umbilical vein is pouring blood towards the placenta, the tributaries of this vessel are receiving blood from the placenta. This, Dr. Houston considers, would imply the existence of conflicting streams in the cord. He states that "it is impossible that the branches and trunks of the same vessels, while continuous and open, could transmit the blood contained in them in opposite directions." ('Dublin Journal,' vol. x.)

An explanation, however, may be suggested, which will show that the views of Sir Astley are perfectly consistent with all the habits of circulating blood.

The question may be, at first, limited to the veins. The umbilical vein of the healthy child receives a large communicating vessel from the corresponding channel in the cord of the monster. This must be looked upon as a main trunk, which receives branches in two directions; from the placenta on one side, from the cord of the monstrosity on the other. The contrariety only remains until the two streams are mingled in their common channel. The blood passing from the placenta by the venous radicles, would be mixed with the blood coming from the monster by its umbilical vein, and both together would be conveyed, by the communicating vessel, into the umbilical vein of the healthy child. A similar explanation would of course hold good as regards the arteries.

We may then be content to adopt the view suggested by Dr. Young, and worked out by Sir Astley Cooper. The circulation in such monstrosities depends on the heart of the healthy twin, which acts through great anastomosing vessels upon the surface of the placenta.

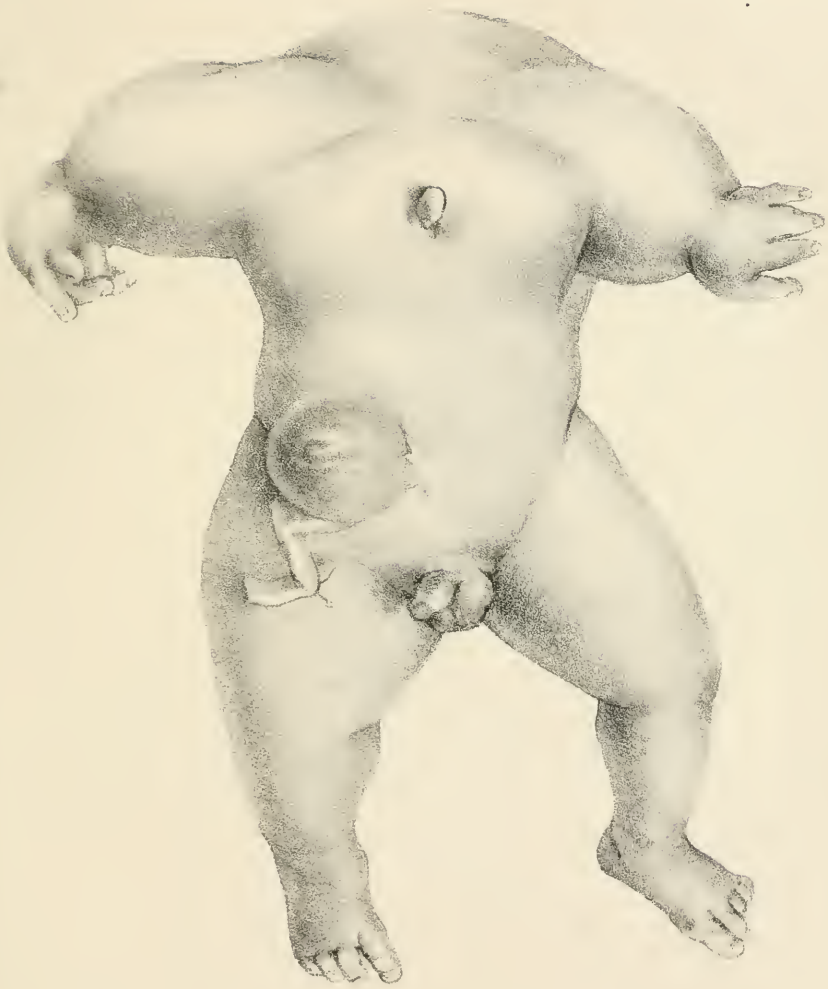
In conclusion, I must express myself much indebted to Mr. R. T. Gore, of Bath, for a great deal of valuable information connected with the literature of the subject.

DESCRIPTION OF PLATES VII AND VIII.

PLATE VII.—The fœtus previous to dissection. The conical projection on the superior part of the trunk is the tip of the tongue.

PLATE VIII.—The trunk laid open by a conical incision. The main arterial vessel is seen on the left side of the spine; the vein, on the right. Near the artery the sympathetic ganglia are seen with their communications with the spinal nerves. One of the kidneys is left *in situ*, the other has been turned aside and cut open. Near each kidney is an undescended testicle. At the upper part, the brachial plexus is visible, below the lumbar, while the intercostal nerves and ribs are seen between. The bladder, urachus, and a portion of the intestine are seen emerging from the pelvis.

The outline at the side (*a*) represents the upper end of the spinal cord, with the nerve-roots in connection with it.



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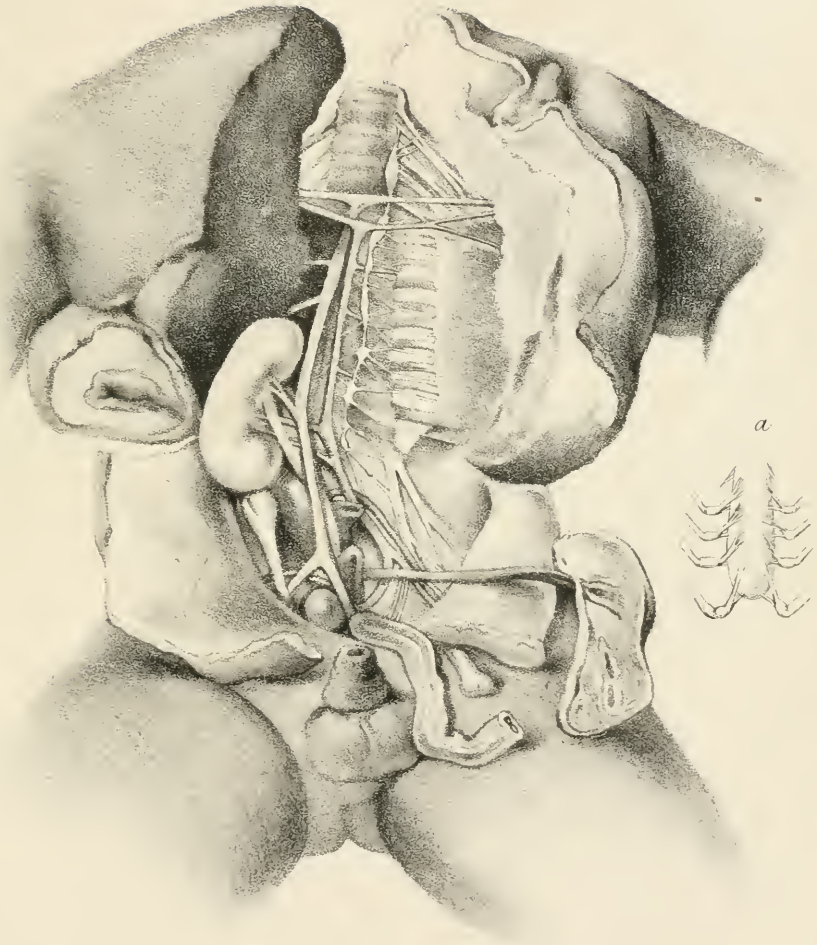

Dr Westmacott. del. G.H.F. W.West. imp.

CASE

OF

EXTREME DEFORMITY OF THE NECK AND FOREARM

FROM THE

CICATRICES OF A BURN,

CURED BY

EXTENSION, EXCISION, AND TRANSPLANTATION OF SKIN, ADJACENT AND REMOTE.

EXHIBITED BY

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Received April 23rd—Read May 26th, 1863.

L— W—, æt. 8 years, admitted into King's College Hospital under Mr. Bowman, January, 1862, for an extensive burn of the neck and both arms.

A great portion of the skin covering the front and left side of her neck and chin was completely destroyed. On the left forearm, the whole skin except a small strip on the radial side; and on the right arm, a less extensive portion in front of the elbow were damaged. The child was in hospital many months, and notwithstanding the most careful attention the healing of the sores was so slow, and the following contraction of the cicatrices so great, that when

discharged, a great portion of the sore on the neck, and still more of that on the left forearm, remained unhealed.

On the 24th of September, 1862, she was again admitted under my care. During the interval, the sore in the neck had healed, that on the left arm had diminished a little in size, while the contraction of the cicatrices had so much increased as to give rise to frightful deformity of the neck, left arm and hand.

In front of the neck was a thick, hard, and callous cicatrix, an inch wide, extending from the top of the sternum to the left side of the chin. It was raised about two inches above the level of the skin of the neck, projecting in a thick, hard ridge laterally, and drawing the skin on each side into a puckered pouch, larger on the right side than on the left. The head was drawn forward and downward toward the left side, the movement of the jaw being greatly impeded. The left corner of the mouth was drawn downwards so as to permit the escape of the saliva. Extending along the base of the jaw, on the left side, was a white, puckered cicatrix, reaching as far as the lobe of the ear; much tension existed in the integuments over the breastbone and jaw.

To a still greater degree had increased the deformity of the left arm and hand. On the back of the wrist, extending from the base of the fourth finger as high as the lower third of the forearm, was a thick, tough, projecting and falciform cicatrix. The wrist-joint was completely reversed; the hand drawn backwards upon the forearm; the metacarpo-phalangeal and finger-joints curved backwards. The little and fourth fingers were drawn to within an inch of the back surface of the arm; the first and second fingers projected at diminishing angles; the thumb was placed at a right angle to the axis of the forearm. The whole hand was also considerably adducted upon the forearm. On the back and outer side of the arm was a large oval sore, reaching to the elbow, with pale fungoid granulations, and a dense, thick, cicatrizing margin. This had long been stationary in size. The inner side of the upper arm, and the whole surface of the forearm, with the exception of an elongated patch on

the outer side, was seamed with cicatrices, and extremely tight and tense. This tension seemed to be the chief reason why the sore had not healed. Above and behind the inner condyle is another ulcer about the size of a shilling.

In front of the right elbow is a puckered cicatrix, which has contracted the joint to an angle of about 125°; and on the back of the hand is another, drawing the little finger away from the rest.

The girl, though almost completely incapacitated from helping herself by these extensive deformities, was in good health, and seemed to be in a most favorable condition for any auto-plastic operation which might be considered eligible.

The treatment was commenced by gradual extension of the right elbow, by the application of a straight well-padded splint in front of the arm. This was continued during the whole progress of the case, and was perfectly successful in straightening the limb.

On the 4th of October, I operated upon the neck of the patient by the following steps. First:—The fold of skin behind the prominent cicatrix was transfixed a little above the middle by a scalpel, with the edge directed downwards and forwards. The cicatrix itself was then divided, so as to separate it from the sternum close to the surface, and detaching it as a V-shaped flap with the apex downward. An extremely hard resisting tissue under the cicatrix was freely divided, so as to give the head free play. Next:—From the point of the V an incision was made, vertically downwards, for an inch and a half, so as to make a Y. From the lower extremity of this, a curved incision was carried to the right. The skin forming the pouch here was then lifted, so as to form a flap large enough to cover, when slightly turned to the left, nearly the whole of the wound. The half detached cicatrix was then pushed well up under the jaw, and the flap of skin spread out below it and secured by fine silver sutures to the margins of the wound. The wound was simply dressed, with the head well thrown back.

On the 13th the sutures had ulcerated through at the

margin of the wound, remaining still attached to the flap itself. This marginal skin being impaired by the old cicatrices, proved less tenacious in holding the sutures than the more healthy flap. The wounds healed rather slowly by granulations proceeding mainly from the flap, which retained its place very well, becoming adherent over the greater part of its deep surface.

On the 5th of November the sore was entirely closed, and the patient could then throw her head well back and move it freely laterally. When the neck was stretched, however, the old cicatrix which had been left at the upper part of the wound became raised above the surface, and showed an evident tendency to contract.

It now became a question as to whether anything should be attempted to remedy the deformity of the left wrist. Gradual extension had been perseveringly tried, and failed to accomplish any result, except an aggravation of the ulcerating process in the extensive sore remaining at the back of the forearm. There was no healthy skin on the fore- or upper arm, which could be made available for such adjacent transplantation as had been accomplished in the neck. To meddle with any of the cicatrized skin, would, in all probability, result in sloughing, and an increase of deformity. I ultimately determined to attempt an operation of remote transplantation from some other part of the body, upon the Taliacotian principle.

The first thing was to find some part of the body upon which the arm could be kept immoveably fixed and in close contiguity for a sufficient length of time, and with as little discomfort to the patient as to give a reasonable chance of a successful issue. The arm rested most easily, in the recumbent posture, upon the anterior abdominal walls. But these are in constant respiratory motion. At first, this seemed to constitute an obstacle to success in an operation where so much depends upon absolute rest.

It occurred to me, however, that the arm might be so fixed upon the belly as to rise and fall with it in respiration, and so we might obtain, if not absolute rest, so much rela-

tive immobility as would permit adhesion between the opposed raw surfaces. Accordingly, I had constructed a breastplate, of gutta-percha, to fit upon the front and sides of the chest, reaching from the armpits to the umbilicus. Attached to its lower border was a splint for the forearm and hand, placed at an oblique angle, and above this, to the left side, a scroll-shaped splint for the upper arm. This prevented the weight of the arm (sinking downwards in the recumbent position), from dragging asunder the applied surfaces of the wound after operation. The whole was riddled with holes for ventilation, well padded with cotton wool, covered with wash leather, and fastened with pieces of bandage round the neck and body.

Next, as to the choice of the part from whence the flap should be taken. The cutaneous vessels of the abdominal surface pass generally through the subjacent aponeurosis, and almost directly at right angles towards the surface. At certain points, however, superficial vessels from neighbouring parts pass more or less parallel with the surface of the skin. The largest and most important of these, are the superficial epigastric vessels proceeding from the common femoral, across Poupart's ligament, upwards and inwards towards the umbilicus. It is evident that if a flap were raised so completely as is necessary for the purpose of remote transplantation, without regard to the arrangement of the vessels supplying it, the greater part of its vascular connections with the body might be severed, and the flap would probably slough wholly or in part, or at all events would not readily institute the adhesive process. It became a matter of importance, then, to choose such a position as would leave in the base of the flap the greatest amount of blood-vessels running parallel to its surface. The most eligible part for this purpose was a little below and to the left side of the navel, leaving the base of the flap downward to receive the above-mentioned epigastric vessels as its chief source of vascular supply. This region had the additional advantage of lying in convenient relation to that part of the arm where the flap was required.

On the 5th of November, 1862, the patient was again placed under chloroform in the theatre of the hospital. First, the outline of the flap was marked out in ink, of a lancet-shape, with the point directed upwards and inwards, and the base as broad as the widest part of the flap itself, directed towards the left groin. The cicatrix on the left wrist was then divided by a transverse incision, carried far enough to permit of complete straightening of the wrist, and the edges of the incision were also a little detached. The extensor tendons and their sheaths were found to be quite unaffected, playing freely over each other when the hand was moved. The flap was next dissected up from the abdomen, its thickness being made to increase towards the base, a considerable quantity of subcutaneous tissue being raised with it. The deeper layer of the abdominal fascia was left untouched, for the purpose of forming granulations, and also to permit a free gliding of the resulting cicatrix over the subjacent aponeurosis. The flap was then held up by an assistant, and the sides of the wound from which it was taken drawn together and held by two long pins and wire sutures. Pledgets of lint and a thick layer of simple dressing were fixed upon it by long strips of adhesive plaster. Upon this the left wrist was then placed, with the transverse cut opposite to the flap; the breast-plate carefully adjusted, well padded with cotton wool, and held firmly in place by long and broad straps of adhesive plaster passed round arm, splints, and body. The surfaces of the flap and its bed were then washed with lukewarm water, till all bleeding had ceased, and the point of the flap was placed in the upper or radial angle of the cut on the wrist. Two rectangular pins, such as I usually employ for the compression of varicose veins, were then applied to hold the centre of the flap firmly upon the raw surface of the wrist. These were passed in opposite directions, about an inch apart from each other, transfixing the middle of the flap, and including a deep and extensive hold upon the skin of the forearm at the upper margin of the incision. The pins, when locked together, formed a sort of wire parallelogram, with a

lever-like action at each end, which could be regulated by padding, so as to increase or diminish the pressure upon the flap as the subsequent tension might require. The edges of the flap were also closely attached to the margin of the wound by fine wire sutures. A light simple dressing was used, and fastened so that it could be removed easily, without interfering with the rest of the arrangement.

After the operation, the girl continued in good health, and was very quiet and tractable. The splint was perfectly comfortable, and she had little or no pain in the parts. Next day, the flap was looking vascular and healthy.

On the 8th, three of the points of suture were removed, the edges at the same place had somewhat separated. The flap seemed to have become adherent by its deep surface.

10th.—About an inch of the edge of the flap near its base, towards the fingers, was found to have become cicatrized to the arm. The apex of the flap had become slightly retracted, and was held entirely by the pins; some discharge begun to appear under the arm, from the sore on the abdomen.

Nine days after the operation, the splint cuirass was detached and lifted at the right side, the arm and hand being fixed by straps of plaster, and carefully held by an assistant. This was necessary for the purpose of cleansing and examining the abdominal sore. It was granulating in a most healthy way. The pins and sutures were removed, the sore and skin well washed, dusted plentifully with oxide of zinc and dressed as before.

At the edges of the flap, two or three fresh points of adhesion had commenced, and nowhere was there the slightest appearance of sloughing. A few days afterwards the rectangular pins were removed, the points of adhesion having extended considerably in both directions.

21st.—The cicatrized points have now joined each other, and the safety of the flap seems insured. The flap is carefully supported by long narrow strips of adhesive plaster placed obliquely across arm, body, and splint in all directions.

The old sore below the elbow is now beginning to heal rapidly, and discharges healthily.

27th.—The flap has become thoroughly united, both by its deep surface and edges, close up to the base of attachment. The sore on the abdomen is much smaller, granulating above the level of the surrounding skin, and cicatrizing rapidly at the margins. The flap is healthy looking, vascular, and firm on pressure; its sense of touch somewhat indistinct, and still referred to the abdomen. Being anxious not to cut off the parent connection too rapidly, lest the newly formed vascular communications should fail in the demand too suddenly thrown on them, I postponed the commencement of the separation for some days, and determined to accomplish it by small instalments at distant intervals. It was rather with the object of preventing the shrivelling so often following transplantations, that I pursued this cautious course, than from any fear of direct sloughing, which the completeness of the new vascular union would at any rate have prevented.

On the 29th, I divided about half an inch on each side of the base of the flap, obliquely towards the abdomen, so as to include as much as possible of the abdominal integuments. These incisions, when finally extended to meet each other, will transform the lancet-shaped flap into a lozenge-shaped patch.

The pedicle left to the flap was about one and three-quarters inch wide. A strip of lint passed round the base prevented the cut surfaces becoming again adherent. The arm is now kept in position by straps of plaster and a roller only. The flexion of the wrist and finger-joints was now increased a little day by day, by the arrangement of the strapping, so as to make traction upon the pedicle of the flap, and to draw into it more of the abdominal skin to cover the wrist and hand when in a state of complete flexion. The hand was also gradually shifted over towards the opposite side of the body, so as to remove it from the surface of the abdominal sore, upon which it had hitherto more or less rested.

On the 6th of December an additional portion of the flap was severed; the degree of flexion still more increased; and the hand shifted completely over the navel.

After two more such operations at intervals of a week, reducing the width of the pedicle to about half an inch, each succeeded by complete union of its cut edges to the forearm, it was found that an obscure sense of touch, referred to the arm itself, had appeared in the semi-detached flap, indicating a satisfactory amount of vital connection. Accordingly, on the 3rd of January, 1863, the pedicle was completely detached. By this time, from the continued flexion and traction, the long diameter of the transplanted patch lay parallel to the forearm, instead of across it as originally placed. The sores on the arm and body were much diminished in size, the latter rapidly cicatrizing.

After complete severance from the belly, not the slightest alteration was observable in the flap, and the small abdominal sore speedily healed. The limb was kept upon a splint with a hand-piece well bent forward. The elbow was, at the same time, extended to relax the skin at the back of the arm, and so to allow the sore to heal more readily. Every day the splint was removed, and the wrist and fingers well flexed, to effect the restoration of the normal condition of the distorted joints and tendons. At first, this gave rise to great pain, which became less as the treatment progressed. The joints became gradually more flexible; the skin more pliable; the sore contracted slowly, and finally healed altogether, and the patient began to take up things with the hand. Latterly, the fourth and little fingers could be made to close in upon the palm, and the patient can now voluntarily bring their tips to the surface.

The transplanted patch has retained its plumpness, and much of its original colour and appearance, affording a marked contrast to the ruddy colour of the skin of the arm. It glides easily over the subjacent tissues. Such resistance as still exists to flexion is felt to be placed, chiefly, in the cicatrix surrounding the patch. Though it cannot be said to assimilate, at present, very closely to the neigh-

bouring parts, yet, as they increase in plumpness by development, it may show, in adult life, as complete an improvement in appearance as it has already proved in usefulness.

In the meanwhile, the neck had been left without extending apparatus, with a view of affording the utmost ease to the patient while undergoing the treatment for the arm. As the small remaining sore closed, the old cicatrix left in the first operation resumed its tendency to contract, and rose above the surface of the skin. The cicatrix had been left from a disinclination to take away any portion of the tegumentary tissue, where the loss of it was so greatly felt. It became evident, that the advantage of leaving it with this view was rendered nugatory by its inveterate tendency to contract indefinitely. An attempt was made by gradual extension to restore its extensibility. This resulted always in a return of ulceration in some part of the cicatrix, necessitating a removal of the extending power.

Accordingly, I determined to dissect away the contracting portion of the cicatrix entirely. This was done on the 31st of January, 1863. An incision was made on each side of the projecting cicatrix, and carried deeply through the tough fibrous tissues. The incisions were made to join each other, above and below, and the intervening hard cicatrix dissected away entirely. The edges of the wound were then freed a little from their deep connections, and four double wires were drawn across the wound at equal distances, taking a deep hold of the tissues about an inch from the margin. Two pieces of gum elastic catheter were then cut to the length of the wound, and the wires twisted upon them as a quilled suture. Four points of interrupted wire suture were then placed close to the edges of the wound, each alternating with the points of quilled suture.

The whole was then supported by long strips of adhesive plaster, placed far round the neck, shoulders, and breast, to draw the neighbouring skin towards the wound in all directions, and so relieve the strain upon the sutures.

The interrupted sutures were removed as they became

useless; the quilled suture being retained for about a week. Primary union to the extent of two inches took place in the middle of the wound, the adhesion extending to the deepest part of the incision. A small degree of gaping had taken place above and below the quilled suture.

These were dressed with water dressing, and drawn together by long strips of plaster. The sores finally closed, without any contraction of the cicatrix whatever. On the 10th of February, a gorget of gutta percha, covered with wash-leather, having a good purchase upon the shoulders, breastbone, and lower jaw, was applied, well padded with cotton wool, and kept sufficiently remote from the wound to prevent undue pressure. This kept the chin well upward, and prevented all motion during the healing of the sores. But the most influential agent in preventing a return of contraction, was the primary adhesion resulting in a thin linear cicatrix over the greater extent of the wound, just at the curve of the surface from the neck to the chin.

This point I have found in this and other cases, to be the most subject to continued ulceration, and to the most obstinate after-contraction. This results, probably, from its position at the most angular and most moveable part of the junction between the head and neck, subject alike to the motions of the jaws, head, neck, shoulders, the pharynx in swallowing, and chest in respiration, one or other of which must be at all times interfering with cicatrization, and keeping up that irritation of the sore, which results in a large deposition of the fibroid elements, of which the inveterate tendency to contract indefinitely is, under certain conditions, the best friend of the surgeon, and under others, his most persevering antagonist, in his efforts to remedy such deformities.[1]

[1] After the reading of the paper the child was introduced to the Society, and examined by the Fellows.

ACCOUNT OF A PATIENT

UPON WHOM

OVARIOTOMY WAS PERFORMED TWICE;

WITH REMARKS.

BY

T. SPENCER WELLS, F.R.C.S.,

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Received April 20th.—Read June 9th, 1863.

In November, 1862, I was consulted by a married woman, forty-two years of age, from whom an ovarian tumour had been removed six months before by another surgeon. She left the institution in which ovariotomy was performed three weeks after the operation; but about a week after going home she became sick, and noticed an enlargement on the right side of the abdomen. She consulted Sir Charles Locock, who had seen her before the first operation, and who told her that another tumour was growing. Sir Charles saw her again in October, told her that the tumour was increasing, and advised her to wait about three months before having a second operation performed.

When she came to me I was not aware that ovariotomy had ever been performed twice on the same patient. A case had been recorded in America where one surgeon had attempted to remove an ovarian tumour, but failed in his attempt, and another surgeon had afterwards succeeded.

But I could find no case on record in which a patient had recovered after ovariotomy, and had afterwards undergone the operation a second time on account of disease of the remaining ovary. I was, therefore, very anxious to obtain the opinion of eminent men respecting this patient, and I believe that several who saw her with me looked upon the case as unprecedented. But I have since learned that Dr. Attlee, of Philadelphia, has performed ovariotomy successfully upon a patient from whom Dr. Clay, of Manchester, had removed an ovarian tumour of the opposite side sixteen years before. The case which I bring before the Society is, therefore, not the first in which ovariotomy has been performed twice on the same patient; but it still appears to be sufficiently interesting to justify me in bringing it thus prominently before the profession.

When the patient first consulted me the tumour filled the greater part of the abdomen below the level of the umbilicus. On the right side it was elastic and obscurely fluctuating, while on the left side it was very hard. The uterus seemed to be closely connected with the hard tumour on the left side. The catamenia had not appeared since the first operation; but at every monthly period she had had pains in the back and thighs, lasting for a day, and leaving pain in the right hip and swelling of the breasts for two or three days. Ever since the operation she had complained of pains below the epigastrium, with flatulence, and the bowels never acted without purgative medicine.

On the 25th of December, the usual symptoms returned with the monthly period; but this time the discharge came on, not excessive in amount, without clots, and lasted five days.

On the 3rd of January, 1863, the girth of the abdomen at the umbilical level was thirty-five inches, and forty inches over the most prominent portion of the abdomen, which was about three inches below the umbilicus. The distance from symphisis pubis to umbilicus was eleven inches, and from umbilicus to ensiform cartilage six inches. From one anterior superior spinous process of the ilium across the

abdomen to the opposite process the distance was eighteen inches. There was a hard cicatrix three-quarters of an inch to the right of the linea alba, extending from two inches below the umbilicus to seven inches from this point; the cicatrix thus being five inches long. The tumour moved freely beneath the abdominal wall, but there was a slight crepitus felt nearly all over it as it moved. There was still the same extreme hardness of that portion of the tumour to the left of the umbilicus, and the same elasticity and obscure fluctuation of the portion to the right, as at my first examination.

It was evident that the connection between the uterus and the tumour was close, for as the patient lay on her side the uterus was pulled almost out of reach. The uterine sound passed to four and a half inches; not towards the hard tumour on the left side, but towards the right side, its point being distinctly perceptible just above the right internal abdominal ring. Fluctuation could be detected (though not very distinctly) in the vagina, below the hard portion of the tumour on the left side.

I communicated with Sir Charles Locock upon all these points, and proposed to make an exploratory incision, and to be guided by the connection of the tumour as to further proceedings. Sir Charles approved of this suggestion, and added, "the operation affords the only hope of relief."

Before proceeding to operate, I considered whether it would be better to make the incision through the linea alba—that is, within an inch of the cicatrix—or in one of the lineæ semilunares. But as there was some doubt whether the tumour was a growth from the right ovary, or a growth of some portion which had not been removed from the left side—in other words, whether the uterus was *pulled* or *pushed* to the right side—it appeared to be safer to cut in the median line than to run any risk of making the incision on the side opposite to the uterine attachment.

I performed the operation on the 13th of January, 1863. Mr. Clover administered chloroform, and I was ably assisted by Dr. Savage, Dr. Drage, of Hatfield, and Mr. Webb, of

Welwyn. I made an incision over the linea alba, three-quarters of an inch to the left of the cicatrix, and parallel with the lower four inches of it. On dividing the peritoneum, the tumour was seen to be composed of very thin-walled cysts, very tensely distended with clear fluid. These cysts, or rather divisions of a multilocular cyst, passed successively through the opening in the abdominal wall as Dr. Savage pressed the tumour from behind forwards. Several filmy layers of organized lymph and a layer of expanded omentum were pressed outwards before the cyst, and were divided on a director. A piece of omentum which adhered both to the cyst and to the abdominal wall near the upper part of the incision was easily separated, and the tumour was then pressed out entire, without emptying any of the cysts. The pedicle was short, but it was easily secured by a clamp. It passed in the usual manner from the right side of the uterus. The uterus seemed to be of natural size. No remnant of the left ovary was found. After cutting away the tumour, there was some oozing of blood around the clamp, but it was stopped by tying a ligature tightly round the pedicle beneath the clamp. One bleeding vessel in the abdominal wall, and two in the omentum, were also tied. Just above the upper angle of the wound a long coil of small intestine adhered firmly to the abdominal wall. As the patient had complained of pain at this spot, and had suffered from constipation ever since the first operation, I examined the connection between the intestine and the abdominal wall to see if they could be separated safely; but the adhesions appeared to be so very close that I did not attempt to effect any separation. The wound was closed by deep and superficial silk sutures.

The cyst is placed on the table of the Society. It is a good specimen of what is known as the compound proliferous cyst; and it is curious that the small groups of minute cysts not only grow into the cavity of the parent cyst, or project inwards, but also perforate the cyst-wall and project into the peritoneal cavity.

The patient rallied remarkably well after the operation,

and for forty-eight hours seemed to be recovering. Two small opiates were given on account of pain, but reaction was not excessive. The aspect was good; and the tongue, though white, was moist. The pulse was about 100. I removed the clamp forty-four hours after operation, as it seemed to be lying quite loose on the wound; the ligature which had been tied beneath it also came away with a shred of dead fibrous tissue. There was no bleeding. I also removed three of the sutures.

On the 16th, the third day after operation, there was some flatulent distension of the abdomen, and frequent eructation, but no vomiting. The rectum was cleared by an enema. At 9 p.m., during one of the "fits of belching," as the nurse called them, the lower part of the wound gave way, and a knuckle of intestine protruded. A good deal of fetid serum also escaped. I returned the intestine, reapplied three sutures deeply, and the patient did not seem to be worse.

On the next day, the 17th, there was free fetid discharge from the lower part of the wound, and vomiting became troublesome; but the pulse was not more than 110, and the aspect was good.

On the 18th, the pulse had risen to 120, but the tongue was moist and cleaning from the edges, and the colour of cheeks and lips very good. Still she was decidedly weaker, and the tympanites was increasing.

She continued to become weaker all the next day, notwithstanding the free use of stimulants and nourishment both by the mouth and the rectum; and she died on the seventh day, or 154 hours after the operation.

Decomposition of the body took place very rapidly. There was a good deal of fetid serum in the peritoneal cavity, and some traces of recent peritonitis were also shown by flakes of lymph. There was no blood nor clot to be seen, and only one or two shreds of sloughy tissue at the spot where the tumour had been removed from the right side of the uterus. The peduncle of the tumour first removed connected the left side of the uterus closely with the abdominal wall.

The adhering portion of intestine observed during my operation was so closely attached to the abdominal wall that it was difficult to separate it by dissection; and the greater part of the omentum also adhered to the abdominal wall.

This case alone is sufficient to prove that ovariotomy may be performed twice on the same patient without any unusual difficulty. What the risk may be as compared with the risk of first operations can only be ascertained by a number of cases.

Reflection upon this case would seem to suggest that, in performing the operation for the second time on the same patient, it may prove advisable to make the incision at some distance from the cicatrix left after the first operation; or, if the incision be made near the cicatrix, it may be necessary to leave the sutures longer than in ordinary cases, as the process of union may be slower near a cicatrix than in an uninjured part.

The lessons suggested to those who perform ovariotomy under ordinary circumstances are—

1. That the operator should be careful not only to remove every portion of an ovarian tumour on one side, if it be possible to do so, but also to examine the opposite ovary carefully, and to be guided in his practice by the knowledge that if the ovary be not healthy and be left behind, morbid growth will probably take place, and a second operation be required.

2. That in uniting the wound in the abdominal wall the divided edges of peritoneum should be brought closely together in the manner which I was the first to propose in a paper presented to this Society five years ago. The adhesions between the omentum and intestine and the abdominal wall observed in this patient precisely resemble the condition which I have observed in dogs, rabbits, and guinea pigs after opening the abdomen, and closing the wound by sutures which have not included the peritoneum. In every case, the serous bag was completed by adhesion of portions of omentum or intestine, or of both; and in some cases the

animals were greatly inconvenienced by these attachments. But in all the cases where two surfaces of peritoneum had been pressed together by the sutures, union took place without any adhesion of intestine or omentum. Several preparations are placed on the table of the Society which illustrate this fact, and show that the supposed danger of the sutures coming into contact with and irritating the viscera, or of the tracks of the sutures forming fistulous openings between the skin and the peritoneal cavity, are purely imaginary dangers. It is demonstrable that the folding together of the peritoneal borders of the wound completely conceals or shuts off the sutures from the cavity of the peritoneum; and even if the sutures are left long enough to form sinuses, these must still be external to the peritoneal cavity.

The surgeon who performed the first operation on this patient does not include the peritoneum in his sutures; and I think that the adhesion of intestine and omentum with the consequent discomfort and constipation suffered by the patient—evils observed in animals so treated, but never observed in those where the peritoneum had been included in the sutures, nor in any of the patients who have either died or recovered under my care—are strong arguments in favour of that mode of uniting all penetrating wounds of the abdominal wall which I have submitted to the consideration of the Profession in this and former papers brought before the Society.

ON THE

INDUCTION OF PREMATURE LABOUR

IN

CASES OF PREGNANCY,

COMPLICATED WITH

ALBUMINOUS URINE, DROPSY, AND AMAUROSIS.

BY

ROBERT LEE, M.D., F.R.S.

Received April 22nd.—Read June 9th, 1863.

On the 29th of January, 1863, I saw a young lady in the third month of her first pregnancy, who was suffering from great sensibility in the region of the uterus, sickness of stomach, and general nervous irritability. The pulse was not very rapid, and there was no symptom to excite alarm.

On the 21st of March I received the following letter from Mr. Bowman:

"5, Clifford Street; March 21st.

"Dear Dr. Lee,—I am anxious for a consultation about Mrs. —— whom you saw some time ago, who has now a serious complication of her pregnancy, in the shape of a retinal affection, so that we may confer on the best plan of

treatment for her. I could come to you this afternoon between 2 and half past, or could receive you here up to half past 2, if more convenient.

"Yours very truly,

"W. Bowman."

Soon after the receipt of this note I went to Mr. Bowman's house, where the patient and her mother were waiting. Mr. Bowman then informed me that he had examined the right eye with the ophthalmoscope, and ascertained that there was a destructive disease going on in the coats of the eye. From the condition of the retina and choroid coat Mr. Bowman was led to suspect that there was some disease of the kidneys, and on examining the urine he had discovered that it was loaded with albumen. A small quantity was put into a glass tube, and heated with a spirit lamp, and it was at once seen that the patient was suffering from albuminuria in a high degree. There was no swelling of the face or extremities. There was headache and quickness of the pulse, and the patient being in the sixth month of pregnancy, I inferred that she was threatened with convulsions. A leech was applied to each temple, a grain of calomel given at bedtime, and an aperient ordered to be taken in the morning. The symptoms became aggravated during the three following days. I then proposed that premature labour should be induced, believing that the affection of the eyes and kidneys arose from the pregnancy, and that they would not yield to any treatment until the fœtus and its appendages had been removed from the uterus. Some years before I had seen a patient in Holland Ward, St. George's Hospital, under the care of Dr. Bence Jones, with albuminuria and dropsy, in whom all the symptoms speedily disappeared after the spontaneous expulsion of a dead fœtus of seven months.

Before having recourse to the induction of premature labour, it was considered proper that Dr. Robert Ferguson should see the patient, and sanction the proceeding. On the 27th March, Mr. Bowman, Dr. Ferguson, and I, met in consul-

tation to consider the subject, and Dr. Ferguson thought it unadvisable to induce premature labour, chiefly on the ground that the life of the child would necessarily be sacrificed, as the pregnancy had not advanced beyond the sixth month. It was determined in consequence of this opinion not to interfere, but to wait and see what course the disease would take.

Dr. Ferguson prescribed the following medicines, which were taken with great regularity until the 8th of April:

℞ Liquor. Ammoniæ Citrat., ℥ss;
Ammon. Benzoat., ℥ss;
Syrup. Corticis Limonis, ℥ss;
Potass. Bicarb., ℥iiss;
Aquæ, ad ℥viij.
Sumat, ℥iss cum ℥ss Succi Limonis, 6tis horis.

27th March, 1863.

R. F.

On Friday night the 10th April, there was an attack of convulsion, but the symptoms were not of long duration. They were, however, sufficient to excite apprehension that fatal puerperal convulsions would soon take place, if a period was not put to the pregnancy. The albuminous state of the urine continued undiminished.

At a consultation held on Saturday, the 11th April, at a quarter past 1, Dr. Ferguson, Mr. Bowman, and I, considered it proper that premature labour should immediately be induced. I had no difficulty in passing up the stiletted catheter and puncturing the membranes, when a quantity of bloody-looking fluid escaped, entirely different from the liquor amnii in a healthy condition.

Labour pains came on in the course of the afternoon, and at 11 at night a dead fœtus of four months in a state of decomposition was expelled. The feet presented, and the funis was twisted around the neck. The placenta was in a morbid state, and a part being firmly adherent to the uterus, was removed with great difficulty. Dr. A. Farre saw the patient at this time, and agreed with me in thinking that

it would be unsafe to pass the whole hand into the vagina, and that it would be better to take away all that could be removed with the fingers alone. This I did, and the small indurated portion that had been left escaped, when an injection of warm water was thrown up into the vagina.

During the 12th, 13th, and 14th, the patient appeared to be recovering in the most favorable manner, the albumen in the urine gradually diminishing. On the evening of the 15th there were rigors rather severe, followed by cramps in the muscles of the left arm and leg and about the jaws. Stimulants and anodynes were employed with hot fomentations and frictions, and the cramps gradually disappeared.

On the 16th and 17th, there was less albumen in the urine, and the vision was obviously improving, and sound sleep was enjoyed. The patient continued progressively to recover, until the 21st, when the headache had wholly disappeared, and she could distinctly see the figures on the dial plate of my watch. She could take nourishment, and was stronger. The albumen in the urine had not wholly disappeared, but was very small indeed compared with what it had been before the induction of premature labour.

It would be unphilosophical to draw a general conclusion from a single case, but from the striking happy results of the example of albuminuria and amaurosis with pregnancy, now related to the Society, in which premature labour was induced, it seems reasonable to suppose that in similar cases the same method of treatment might be employed with success.

Mr. Bowman has had the kindness to communicate to me the history of the following interesting case:

Case.—On the 7th of last December I was consulted about Mrs. J. Brookes, jun., who has rather suddenly lost her sight in great measure. There was no headache, nor fulness, nor intolerance of light, nor were there any evidences of congestion on examining with the ophthalmoscope. Perceiving a slight puffiness under one of the eyes, I tested the urine carefully, and then found it to be exces-

sively loaded with albumen. At my suggestion Mr. Brookes took his wife to London and consulted Mr. Paget and Dr. West, two of the best opinions in such a case, both of whom anticipated, as I did myself, that the confinement would be attended with convulsions of a dangerous character. However, on the 9th January I attended Mrs. Brookes in a premature confinement of a male fœtus, still-born. Chloroform was freely given, and no convulsions ensued, and gradually, though slowly, Mrs. Brookes convaleseed, and she has now regained her strength to a point very much as previous to her confinement. I regret, however, to say that the sight has only partially returned, while the albuminous condition of the urine, although very much improved from what its condition was previous to the confinement, is still not satisfactory. I have had the advantage of the opinion of Mr. Paget and Dr. West; have given gallic acid, preparations of iron, salines, cod-liver oil, using gentle counter-irritation to the region of the kidneys; and I have requested Mr. Brookes to take with him a few medicines which may not be procurable at Demerara as fresh as he may take from here.

"April 10th.

"Dear Dr. Lee,—As you will be interested in the case of the lady in connection with Mr. ——, I send it you. Please let me have it when I meet you to-morrow at a quarter past 2.

"Yours truly,

"W. Bowman."

P.S. to Dr. Lee's paper.—Since the preceding observations on the 'Induction of premature labour in cases of albuminous urine complicated with pregnancy,' were presented to the Society, the following case has occurred:—On the 10th May, 1863, Dr. Fly Smith requested me to see a patient who was near the full period of pregnancy, and who had been in convulsions the whole of the night. She was

in a state of complete insensibility. Pupils were widely dilated, the saliva flowing from the mouth. The jaws were clenched, and the muscles of the face and the extremities were convulsed. Pulse was rapid and feeble. There was no symptom of labour. The os uteri had not begun to dilate, but on passing the finger the head of the child was felt presenting, and the membranes distended with liquor amnii. I immediately ruptured the membranes, pressed up the head, and this was followed by the escape of a large quantity of liquor amnii. The os uteri was afterwards gently dilated with the finger. Cupping to the extent of seven or eight ounces from behind the ears was prescribed. The urine had previously been drawn off by the catheter, and ascertained by Dr. Smith to be albuminous.

The patient remained insensible till the evening, when labour supervened, and the child was expelled alive. She remained completely insensible for several days after her confinement, but the convulsions gradually ceased. She has since been removed into Burton Ward, St. George's Hospital, and the consciousness has been completely restored, but not the vision. She cannot yet see any object distinctly. The albuminous condition of the urine has been gradually disappearing, and is now almost gone, and there is every prospect that this patient will be restored to complete health.

DESCRIPTION

OF A

NEW IRIS FORCEPS.

INVENTED BY

W. R. BEAUMONT, F.R.C.S. Eng.,

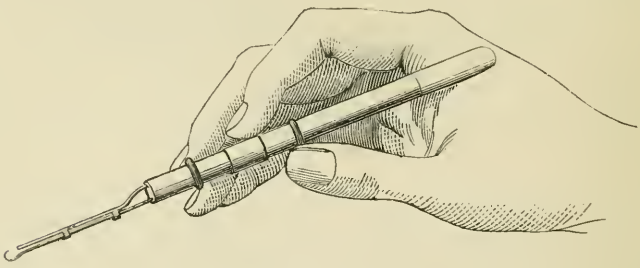
SENIOR AND CONSULTING SURGEON TO THE TORONTO GENERAL HOSPITAL, CANADA WEST; LATE PROFESSOR OF SURGERY IN THE UNIVERSITY OF TORONTO; FELLOW OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON; MEMBER OF THE SOCIÉTÉ UNIVERSELLE D'OPHTHALMOLOGIE OF PARIS.

Received May 5th.—Read June 9th, 1863.

The iris forceps which I am desirous of submitting to the consideration of surgeons practising ophthalmic surgery consists, like Langenbeck's and Gräfe's, of a fixed and a sliding blade, but differs from them inasmuch as the point of the hook is not only more completely concealed, but its concavity is quite filled by the end of the sliding blade, *i.e.*, when the blades are closed, so that the whole of the piece of iris taken up by the hook is securely held The form of the hook is also different, being less curved and rather larger, judging from the engravings of Langenbeck's and Gräfe's instruments given in Mackenzie's work on the Eye. In both of these instruments only a very minute piece of iris can be jammed against the bend of the hook. In Langenbeck's, the hook is the sliding blade, which I think objectionable; and in Gräfe's, the sliding blade (which

is not the hook) must be moved both backwards and forwards by the thumb, which may give rise to a want of precision in seizing the exact part of the iris intended to be seized.

In the forceps I am describing, the point of the hook not being at all exposed when the blades are closed (that is, if the instrument be perfect), cannot possibly catch in the margin of the puncture made in the cornea, but which mishap is liable to occur on withdrawing from the anterior chamber a hook the point of which is in the least exposed. The other advantage to which I have alluded is that of firmly holding between the hook and the sliding blade a larger piece of iris, and consequently the hook is less liable to tear its way out, or extract too small a portion of the iris.



Manner of holding the forceps. The sliding spatula-like blade drawn back so as to expose the hook.

In using the instrument it should be held as seen in the sketch, pressed by the thumb against the point of the middle finger, and against the proximal phalanx of the index (nearly as a pen is held), the point of the index finger being quite free to move without in the least displacing the point of the hook. It may be passed through a small puncture in the cornea, either with the blades closed or with the sliding blade drawn back about one tenth of an inch, the point of the hook being exposed, and ready to take up the exact part of the iris intended to be seized. The

hook should be passed through the plane of the iris very obliquely, so as to avoid wounding (in cases where there is no cataract) the capsule of the lens; and then the point of the index finger (which had held back the sliding blade), being merely raised from the instrument, the sliding blade shoots forward, and its end jams in the concavity of the hook the piece of iris taken up by the latter. The extraction of a sufficient piece of iris through the wound in the cornea is then easily effected, provided that the posterior surface of the iris be not unusually firmly adherent to the capsule of the lens.

As to the puncture in the cornea, I think it is best made with a knife not more than one eighth of an inch broad, and I generally use one which is curved on the flat, its convex surface being towards the iris. The point of such a knife is less liable than one which is straight to get entangled in the iris, especially in cases where the anterior chamber is very shallow; and, moreover, I often puncture with it the nasal or upper margin of the cornea, if the eye be not too deeply set.

The employment of a sliding iris forceps is not so simple as that of a mere hook. One's hand has in some measure to be educated to its use, so that any requisite movement of the point of the index finger in drawing back the sliding blade may be made without communicating any motion to the point of the hook, and then I think the sliding forceps is both more efficient and safer than a simple hook.

In regard to the construction of the forceps, I may say something, as I both made and invented it. The fixed blade, the hook, is made of a moderate-sized sewing-needle, the point of which is easily curved after softening it *a very little*. That end of the shaft of the hook which is fixed in the handle (in a piece of cedar fitting tightly in a silver tube) should be ground to a point, and *square*, in order to prevent the possibility of the shaft of the hook turning *in the least* on its axis; and it should be fixed in the cedar whilst the blades are closed, whilst the sliding blade is in its proper position, in such manner that the point of the

hook is not in the least exposed. The sliding blade is flat, about one sixteenth of an inch in width, and its end rounded exactly to correspond with the concavity of the hook. When the blades are closed, they have the form of a small spatula, perfectly smooth, and rounded at the point.

If the hook and sliding blade are properly made, and properly fixed in the handle, with a spiral spring of proper force (not unnecessarily strong) to urge forwards the sliding blade, the instrument acts with unerring accuracy; but of course it must be perfect, or it is useless, and without great care it will easily get out of order, either from rough usage or from rust caused by the aqueous humour.

A few years ago I invented and made an iris forceps similar to this, except that the sliding blade was round instead of flat, and in its very extremity was a minute hole, drilled just large enough to receive the point of the hook, thus concealing it most completely.

I have used both these instruments frequently, and with very satisfactory results, in operations for artificial pupil, and also in extracting pieces of opaque capsule; but of the two I prefer that which I have first described, and which the accompanying sketch represents. The instrument itself is in the museum of the Royal College of Surgeons of England.

The following cases, which I briefly relate, are selected from among several in which I have operated for artificial pupil, using the forceps described.

G. F—, æt. 27, was admitted into the Toronto General Hospital, March 14th, 1863, the pupil of the right eye being much contracted and adherent, and the iris convex anteriorly, so as almost to obliterate the anterior chamber. A whitish opacity (cataract) was seen behind the pupil, which was too small to allow of any operative procedure on the cataract until the pupil should have been enlarged. The sight of this eye had been much impaired during the last three years, and totally lost during the last six months. He had had no pain or inflammation of the eye, and could

assign no cause for his loss of sight. He no doubt had formerly iritis, though of a very chronic form.

March 27th, 1863.—I punctured the cornea close to its temporal margin, and tried with a spatula to break the adhesions on the nasal side of the pupil, but found them too firm to yield to moderate force. I then passed into the anterior chamber the iris forceps described, seized the iris close to the temporal side of the pupil, and tore away a strip of it, leaving an artificial pupil on the outer and lower side of the iris.

Slight pain occurred during the first night, but none afterwards, and no other sign of inflammation showed itself. Ten days after the operation the eye presented the following appearance:—A large whitish cataract lying behind the pupil. The cataract I had partially broken up during the operation, and it may now with great facility be further operated on.

J. H—, æt. 40, now a patient in the Toronto General Hospital, was admitted totally blind of both eyes, the left quite disorganized, and in the right a cataract and an almost obliterated pupil. The anterior chamber was very deep, the whole of the contracted pupil was adherent to the anterior capsule of the lens, and the centre of the iris was drawn backwards so as to be very concave anteriorly. He has been quite blind during the last three years, unable to find his way about.

I twice operated on the right eye to form an artificial pupil, and at the first operation I found the adhesions so firm that I did not succeed in making a pupil sufficiently large for future operation on the cataract. At the second operation I enlarged the pupil. No severe pain or inflammation followed the operation, but the eye, which was weak and irritable before I operated, has remained so since (a period of eight weeks since the last operation), and I have not yet operated on the cataract.

M. C—, æt. 50, was admitted into the Toronto General

Hospital, November 6th, 1860, the pupil of her right eye being almost obliterated, behind it a whitish opacity (cataract), and the cornea opaque at its lower and outer part. In the left eye was a soft cataract, its colour bluish-white. I performed keratonyxis twice on this eye, which regained good vision, and subsequently in May, June, and July, 1861, I operated three times on the right eye for artificial pupil, and to extract a piece of opaque capsule, using my sliding forceps at each operation.

On the 17th of July, 1861, with a glass of four inches focus, she could readily tell the head of an ordinary pin from its point.

I might relate many more similar cases, but these are sufficient to show that a good artificial pupil may be formed, even in difficult cases, by using the forceps described, and I believe that every surgeon who is in the habit of operating for cataract must have felt the difficulty of dealing with such cases complicated with much contracted and adherent pupil.

A CASE

OF

STRANGULATION OF THE STOMACH

IN

AN UMBILICAL RUPTURE,

AND OF

DEATH DURING ITS REDUCTION UNDER CHLOROFORM.

BY

CHARLES H. MOORE, F.R.C.S.,

SURGEON TO THE MIDDLESEX HOSPITAL.

Received May 13th.—Read June 23rd, 1863.

A VERY corpulent woman, æt. 60, was admitted into the Middlesex Hospital on a Sunday morning. She had been vomiting since the previous Monday, and had had no action of the bowels for three days. She felt, and was, greatly exhausted, her pulse being 120, feeble. She had been operated on ten years previously for a strangulated umbilical rupture by Mr. Wormald.

The lower and greater part of her abdomen was covered with a vast hernial tumour, measuring fourteen inches across and as much vertically. At its upper part it was abruptly prominent, overlapping the umbilicus, where the skin remained fixed to the linea alba; on the sides and below, the tumour had spread itself out between the skin and the abdominal muscles, and sloped gradually to the level of the loins

and pubes: in these directions, therefore, its limit could only be distinguished by the touch. Its wall was thin, tense, inelastic, dusky, and marked by many small vessels. It was tympanitic, painless, and but little tender. No diminution of it could be effected by moderate taxis, though it could be so far impressed that the firm hernial ring in the linea alba was just perceptible near the upper part of the tumour. Coughing or vomiting made the sac very tense.

The vomiting was excessive. Though she had drunk little, she was said to have brought up a couple of gallons of fluid in the previous two days. Whilst in the hospital she took but a cup of tea, yet the vomited matters amounted to three and a half pints in less than four hours. The vomiting was forcible as well as copious, and the ejected liquid was thin, black, and at once sour-smelling and aromatic. Before her admission she had taken calomel, with effervescing draughts and prussic acid. Several enemata had been given, and leeches and blisters applied to the abdomen.

Being satisfied that the hernia was strangulated, I had chloroform administered, and made pressure with the whole breadth of both hands on the upper part of the tumour, directing the fingers towards the hernial ring. A coughing effort, coming on at every expiration, made it impossible to continue the taxis, and I placed her on her left side, and waited until the chloroform again acted. Upon renewing the taxis, a gurgling was heard in the tumour, and I felt it begin to go up at the ring. She then vomited copiously a black fluid, as she had before done, and on the sickness ceasing, her pulse was so feeble that no more chloroform was administered. During this state of feebleness, however, the hernia became easily reducible, about one third of its contents passed into the abdomen, and the fingers could be inserted within the umbilical ring. Instead of recovering strength, she became extremely faint, and I ceased manipulating the tumour. Her pulse and respiration were failing proportionally, the one feebly gasping, the other intermitting. Her features lost expression, her lips became livid, her eyes motionless; then pallor and the collapsed look of death

passed over the face, as gradually and together the pulse and respiration ceased; and in about four minutes from the interruption of the taxis and eight or nine from the last inhalation of chloroform she was dead. Cold splashing, galvanism, and artificial respiration, were employed, but they elicited no sign of reaction or of life, and when the surface was cool these measures were abandoned.

Upon afterwards recalling the points of importance relating to this occurrence, it was established that the interval between the commencement of the inhalation and death was twenty minutes; that the chloroform was administered in a towel pinned into the shape of a cone and open at the top; that it was poured into the towel in five measured portions, of which the first was a drachm and the others forty minims each; that the degree of stupor produced was never deep, and was twice interrupted, first by cough and then by vomiting; that there was no muscular spasm and no stertor; that the pulse became feeble, without the usual acceleration, early in the period of inhalation, and that it failed gradually, there being no sign whatever of any sudden collapse. Both it and respiration continued eight or nine minutes after the chloroform was withdrawn. There was no sudden yielding of the rupture. It receded at first under firm, broad, even pressure, directed towards the ring, and it was not until the tumour softened, as it went back, that the hands were used separately for alternate lateral pressure.

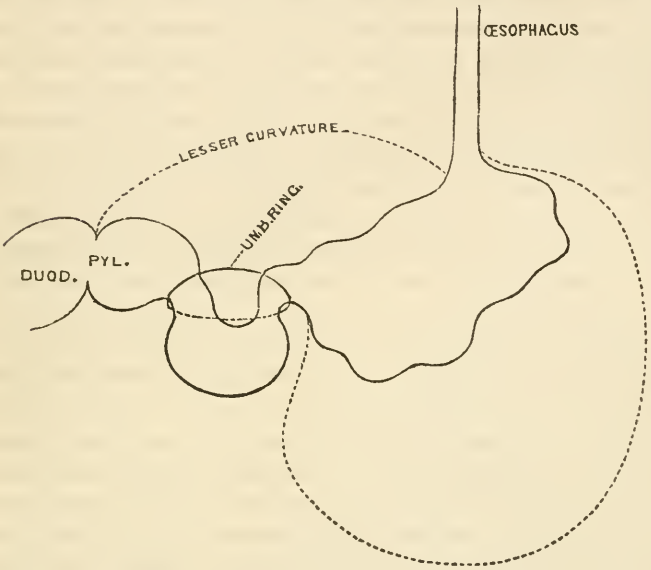
Post-mortem examination, twenty-eight hours after death. —The superficial tissues were stained with blood along the back of the trunk, on the legs, in patches on the face and ears, and along the course of some veins on the front of the shoulders. The heart had some pericarditic adhesions on its surface, and was whitened by old lymph in the lining membrane of the left ventricle. Its valves were all efficient. Its muscular substance was somewhat pale in parts, but generally red and firm. There was clotted blood in all its cavities: that on the right side contained fibrinous coagulum, and measured about ℥iv, being nearly thrice the

amount of that in the left side. The lungs were small, and partly emphysematous, but otherwise healthy. The bronchi were congested : they contained no trace of the contents of the stomach. In the heart, and some other parts, the surfaces in contact with blood were stained of a claret colour.

The hernia was as large as before the taxis was employed, but it was not so tense, and the outlines of the contained bowels could be distinguished in the shape of its surface. Its wall was almost entirely devoid of fat, and was strikingly contrasted in this respect with the subcutaneous tissues of the chest and abdomen, which were in some parts two and a quarter inches thick. The interior of the sac was everywhere smooth, shining, and composed of a very coarse serous membrane.

As the peritoneum was opened by incisions through the lower costal cartilages and diaphragm, and when the linea alba was incised, a vast quantity of blackish liquid welled out, similar to that which had been vomited. A little air first escaped when the sac was opened, but when the incision was enlarged the same kind of black liquid, with its strong sour odour, mixed with that of carminatives, flowed freely forth. The entire quantity which escaped, added to that which remained in the peritoneum, could not have been less than a gallon and a half. The hernia contained the greater part of the small intestines, with their mesentery. The cæcum also and the appendix lay loose in it; and the whole ascending and transverse, with part of the descending, colon arched in the sac around the coils of the lesser bowel. All these parts were naturally distended with air, but not with fæces, and some were tinged with healthy bile. All were also free from inflammation and ecchymosis. The great omentum, short and containing very little fat (in which last respect it contrasted remarkably with the mesentery), was adherent to the front of the sac, and detained within the rupture a flexure, including the entire calibre, of the stomach itself. This extruded portion measured about six inches along its greater curvature ; it was constricted at its two extremities by the hernial ring, and was devoid of

air. The pyloric end of the stomach was within the abdomen, and healthy; the cardiac portion lay flat and flaccid at the back of the abdomen.[1] It was dull and lustreless in



appearance, and flabby in texture, as if it had been overstretched; in some parts it was livid or black. When spread out, it was found to be of very large dimensions, to be lacerated in several parts, and in one spot to be perforated through its posterior wall by an aperture of the size of a sixpence. By this aperture the enormous outflow of black liquid had taken place, as well as of some pultaceous black food which lay behind the lesser omentum. The disposition of the lacerations of the stomach was remarkable. Several were limited to the outer coat, were irregular in shape, and were situated near the spleen: the largest of them extended over nearly the whole top of the cardiac portion from the left of the œsophagus to the spleen. There

[1] Below the œsophagus, in the diagram, is represented the flaccid cardiac portion of the stomach. The lower dotted line suggests the extent of the pouch before its laceration.

were six rents of the inner membrane of the stomach, most of which passed in straight lines to the right of the œsophagus, whilst all of them, looked at together, appeared to radiate from the œsophageal opening as from a centre. Only one of them corresponded with a rent of the peritoneal coat, viz., that by which the back of the stomach was perforated. It was four inches in length, was the longest of all the lacerations, and the only internal one which extended beyond the mucous membrane. The mucous coat forming its margin was soft and black; at the end near the œsophagus, it was reddened and inflamed. The tissues outside it were infiltrated with the black contents of the stomach. The corresponding tear of the peritoneal coat was partly ecchymosed.

The mucous membrane in some other parts of the great gastric pouch was black. These black spots were irregular in form; some were small, no larger in area than a pea or a cherry; one was four inches long and one inch broad. All were surrounded by an ulcerating margin, and were clearly sloughs in process of separation. They were chiefly on the posterior surface of the stomach. The pyloric end of the stomach and the adjoining part within the hernia were healthy, having neither laceration, ecchymosis, discoloration, nor slough. Sarcinæ ventriculi, but no blood-corpuscles, were found with the microscope in the black fluid. The gall-bladder contained a gall-stone of the size of a nutmeg, with a small quantity of bile.

Remarks.—Some of the circumstances of this case require a careful comment.

I. *The strangulation of the stomach.*—The case was clearly one of strangulated hernia. This was indicated by the symptoms at the time of her admission into the hospital, and was proved after death by the state of the intestinal canal. For the contents of the stomach had been black and fluid; the small intestine, on the contrary, was naturally distended with air, and was either of its usual pale appearance or stained light-yellow with bile. None of the bile had re-

gurgitated into the stomach: none of the black fluid had passed onward and discoloured the intestine.

Except in cases of diaphragmatic hernia, it is very rare to find any portion of the stomach in a rupture. It has been partially protruded in the umbilical, and even in the inguinal region. The present case is rare, not only as one of displacement, but also of strangulation of the stomach in its entire calibre, and it appears, indeed, to be unique. The displacement is accounted for by the shortness of the portion of great omentum which was adherent to the anterior wall of the sac. As the sac enlarged, it dragged forward the omentum, and with it the corresponding part of the stomach. Strangulation was occasioned by the great protrusion of the other bowels through the hernial ring.

II. *The dilatation of the stomach.*—Of dilated stomachs, the largest in medical records is probably that of a lady whose case is described in the fourth volume of the 'Transactions of the Pathological Society' (page 137). It occupied the whole front of the abdomen to the left of a line drawn from the anterior superior spine of the right ilium to the ensiform cartilage, and its capacity was ten and a half pints. Proportionally, however, this was smaller than the stomach described in the present paper, of which a part only must have contained no less a quantity of fluid, supposing that all the fluid found in the peritoneum had been at one time in the gastric pouch. In some of the cases there is a difficulty in understanding how the stomach becomes so inordinately dilated, and in the absence of any obstruction to the escape of its contents it can only be supposed that the muscular coat has been paralysed. In the case described in this paper, however, the muscular fibres were distinct and strong; there was manifestly no paralysis, but rather some hypertrophy of them, and the enlargement was a gradual consequence of a partial but permanent obstruction of the portion of stomach incarcerated in the hernia. The result of an excessive enlargement of the stomach appears to be general exhaustion. In this case, one of overfilling, from obstruction and at last complete

occlusion, there occurred not only general exhaustion, which might of itself prove fatal, but also sloughing of the tightly stretched mucous membrane of the organ.

III. *The rupture of the stomach.*—Although by the complete strangulation of the hernia the stomach was deprived of its natural outlet, and became more and more enlarged, it does not appear that the stretching of the organ would of itself have ensured its bursting. Mere distension may account for ruptures of the peritoneal coat. Mr. Curling found that membrane rent as a result of the overfilling of the colon above a stricture. But I am not aware of an instance of complete perforation of either the large or small intestine by the mere accumulation of feculent matters in it, or by however vigorous a peristaltic action, unless violence or gangrene have concurred to produce it. The stomach, however, in the act of vomiting, is compressed with sudden and sometimes great violence, and is thus liable to injury, from which the other bowels are exempt. Of ruptures of the stomach from that cause many instances are on record, and none more clearly attributable to vomiting than those detailed by Mr. Weekes in the fourteenth volume of our own 'Transactions.' Now, in the present case, vast as was its enlargement, the stomach yet retained sufficient sensitiveness to give rise to prolonged and forcible vomiting. To that act, therefore, the lacerations may reasonably be ascribed; and their peculiar relation to the œsophageal opening of the stomach, as well as the pathological change in the tissue which was most rent, appears to make that mode of their occurrence a certainty. Had the stomach in its dimensions only equalled instead of far exceeding those which are recorded as having spontaneously burst during vomiting, it would be perfectly satisfactory to attribute to the act of vomiting the production of the single perforation also, as well as the partial lacerations. There would be no hesitation in doing so, were it not for the two circumstances, that vomiting continued, and that the taxis was in use at the time of the approaching death of the patient. As to the former fact, it is clear from the recorded cases

that an unnatural aperture in the stomach does not preclude the possibility of vomiting. In some instances the patients made efforts to vomit, but they were ineffectual. In others the vomiting was even violent. Hence it is not impossible, though it is unlikely, that the stomach in the present case may even have been burst, as it was certainly partially lacerated, by the vomiting. And with regard to the taxis, it is, of course, not improbable that the pressure necessary to reduce so large a hernia might have contributed to complete a rupture of the stomach already partially made; but it is inconceivable that the taxis, which was employed about the hernia, not the abdomen, should burst the back of the gastric pouch, should occasion many scattered rents of its outer coat near the spleen, should produce numerous radiated cutlike tears of the mucous membrane near the œsophagus, and yet should leave no mark of violence on the anterior part of the stomach or on that extruded portion of it which was under direct pressure in the hernia. The appearances found after death show rather that the stomach was rent in those violent heaving efforts of vomiting by which so vast a mass of fluid was raised towards the œsophagus, and pressed against the adjoining upper parts of the stomach.

IV. *The cause of death.*—This may be found either in the exhaustion of the patient, the rupture of the stomach, or the chloroform. It is probably the united effect of them all.

1. If the mode of dying had corresponded to any of those by which death from chloroform is known to occur, the fatal result would naturally be attributed to that agent. The actual failure of life began while the patient was under its influence, and she never regained consciousness. Yet even before the post-mortem examination had revealed the state of the stomach, it had been concluded that the chloroform, though it might have added to her general exhaustion, had exercised no specific toxical effect upon her heart or brain. Neither the pulse nor the respiration specially failed, but their continuance and their failure was uniform

and proportional. Moreover, though the amount inhaled by this patient, ʒiij ɱxl, exceeded that which in some of the fatal cases proved a poisonous quantity, yet the continuance of respiration for eight or nine minutes afterwards must have ensured the exhalation of it and the recovery of consciousness, so that death should not have resulted from it alone. The symptoms were those of death by exhaustion, and no share in producing it can be assigned to the chloroform, beyond that of having somewhat augmented the feebleness of the patient.

2. The exhaustion of the general strength was indeed very great, and the employment of chloroform was only determined on as an indispensable means of relieving the stricture and the consequent vomiting. When the age of the patient is considered, the long continuance and severity of the sickness, and the existence of gangrene of several portions of the mucous membrane of the stomach, it will be seen that a great prostration of strength must have resulted from a combination of such depressing influences. Indeed, she was very much more exhausted than appeared by her manner and tone of voice, which were rather calm than feeble. The state of her pulse and her own feelings corresponded much more nearly with her real condition, and showed death to be already imminent.

3. It is not uncommonly believed that a rupture of the stomach is instantly or rapidly fatal, and, without due consideration, the present case might be cited as an instance of that occurrence. In a medico-legal point of view, therefore, it is most important that no misapprehension of the nature of the case should prevail from the possible concurrence of death with rupture of the stomach. It seems likely that, though the numerous lacerations had existed for many hours, the actual perforation of the stomach occurred at or about the time of death. For there was inflammation in the vicinity of some of the rents, but there was little recent ecchymosis at the torn parts, and no peritonitis had followed the effusion of the contents of the stomach. These facts do not, however, prove that death

was the instant result of the perforation. When that accident happens from violence, it does not usually destroy life in less than eight hours; and when it is the result of disease of the coats of the stomach, life is not rarely prolonged to twice or thrice that period. A notable degree of peritonitis is in the latter cases found to have been established. Instances of such long continuance of life after perforation from disease abound in the classical writings of physicians on diseases of the stomach. Excluding the unique case of Alexis St. Martin, the usual duration of life after wounds through the stomach is fairly illustrated by the following three examples. In a case of my own,[1] of a fall from a height, in which intense suffering followed the early administration of brandy, and foreshadowed the nature of the injury, death did not happen until the stomach had been ruptured for eight hours. A soldier, observed by Dr. Davy,[2] survived for the same period after having shot himself with his rifle through the stomach. On the other hand, my colleague at the Middlesex Hospital, Mr. Shaw,[3] has recorded a case in which a man died in an hour and a quarter after a gunshot wound of the stomach. The early death in that case was accounted for by the ball having also opened the abdominal aorta, and occasioned a considerable hæmorrhage. From all this it may be concluded to be possible that the perforation of the stomach contributed to the fatal result. In the exhausted state of the woman, however, there was little need of that additional accident to extinguish her waning life, whilst the anæsthesia either annihilated the shock attending the rupture, if it occurred, or so far masked the symptoms of it that they were indecisive.

One deduction as to the mode of treating the case may be added to this report. It is scarcely questionable that the state of the stomach and the great exhaustion of the strength rendered this patient's recovery hopeless from the time of

[1] Holmes's 'System of Surgery,' vol. ii, p. 411.

[2] 'Diseases of the Army,' 1862, p. 414.

[3] 'Pathological Transactions,' vol. x, p. 168.

her admission to the hospital. But reflection on the case suggests the inquiry, whether she might not have been relieved at an earlier period without the enemata, the leeching, and the medicinal treatment which she received, and at the later period, when I first saw her, without the chloroform and the taxis. For it is plain that the incarceration of the stomach and the distension of its cardiac pouch reciprocally augmented each other. As the pouch enlarged, the other contents of the abdomen were thrust out by it into the hernia, and the accumulation of bowel in the hernia in its turn compressed the incarcerated portion of the stomach, until it was strangulated. Had the stomach been emptied by a less fatal method than vomiting, that is to say, by the stomach-pump, the protruded bowels might have returned into the relaxed abdomen, and the compression of the stomach in the stricture have been relieved.

A CASE

OF

TRANSPOSITION OF THE GREAT VESSELS OF THE HEART.

BY

JOHN COCKLE, M.D.

COMMUNICATED BY

DR. SIBSON.

Received May 26th.—Read June 23rd, 1863.

TRANSPOSITION of the great vessels of the heart is sufficiently rare to warrant me in submitting to the Fellows of this Society the particulars of the following case:

W. L—, aged two years and four months, came under my care August 18th, 1858. The following history was given by his mother:—She has had four children. Of these, one died from hooping-cough, another from inflammation of the bowels, the third survives, and is strong and healthy. The subject of the case was born at the ordinary period, a remarkably fine, healthy boy. Two or three days subsequently he became jaundiced, but within a fortnight had regained his colour, and remained perfectly well, a strong, plump child, differing in no respect from other children until the completion of his third month. After this time it was observed that the lips, fingers, and toes turned blue. The breathing also became difficult, especially under the influence of anger. The child was considered remarkably passionate. Cough additionally supervened. Teething

began at the ordinary period, and was completed without difficulty. This peculiarity, however, was remarked—that in both jaws the back teeth were earliest cut. The child appeared to be unusually sensitive to cold. The mother particularly mentioned the unusual intelligence of the child. There was, however, so much weakness of the lower limbs that it could never support its feet upon the ground; they invariably gave way. With the exception of occasional diarrhœa, all the remaining functions seemed naturally performed. Latterly it has begun to lose flesh, and has, at times, a difficulty in sucking.

The child appeared, at the first glance, to be sinking from an advanced stage of pulmonary disease. The face was cold and pallid; the eyes prominent; the conjunctivæ dark. The lips, tongue, and interior of the mouth were of dark purple colour. The fingers and toes cool and clammy, were clubbed, and of leaden hue as far as the second phalanges. The impulse of the heart was extensively visible. Marked pulsation also existed at the epi-sternal fossa. No *fremitus* could be detected over the cardiac region. The sounds of the heart were apparently perfectly normal, excepting that the second sound was unusually loud and marked towards the third left costo-sternal cartilage. Considerable dyspnœa existed, but the lungs offered no definite physical signs. Those already mentioned scarcely ever altered in any important particular beyond paroxysmal increase, although the case was very constantly under observation.

The child, during the last four months of its life, became gradually more emaciated. It suffered also from increasing difficulty of breathing. The mother thought at this period that it was palsied in the lower limbs. Eventually the belly and feet began to swell, and during the latter weeks the body generally was covered with petechiæ. Death occurred, apparently, from exhaustion in the November following, the child having attained the age of two years and eight months.

The body was examined a few hours after death—the

head was not allowed to be opened. The discoloration of the lips, fingers, and toes still remained, although diminished in intensity. Upon removing the sternum, the thymus gland was seen still very large. The heart, distended with blood, occupied a considerable portion of the chest. The pericardium was extensively and very intimately adherent to the left pleura, the visceral and parietal layers of which were so closely united that the heart was firmly held in position. The left lung, concealed by the heart below the second and third ribs, was unexpanded in its lower two thirds, and had probably remained so from birth. The right lung, though somewhat pushed aside by the heart, was healthy. The liver was very large, and of dark purple colour: it occupied both the hypochondria. The remaining abdominal viscera were congested, but in other respects apparently unchanged. Moderate effusion existed in the peritoneal sac.

Upon examining the preparation of the heart and vessels, purpuric maculæ, of varying size, are visible upon the anterior aspects of the aorta and pulmonary artery. The same appearance exists also upon the posterior surface of the right ventricle. The heart is somewhat altered in shape, being broader at the base than usual. Its weight, as nearly as can be ascertained, allowing for the attachment of the vessels, is between three and three quarters and four ounces. It measures nearly 3 inches in the transverse, and nearly 2·2 inches in the vertical direction. The apex is very obtuse, or rather of semicircular outline, formed nearly equally by right and left ventricles; the left slightly predominating. The aorta arises from the fleshy part of the base of the right ventricle, at its left portion, where it presents itself in front, being quite uncovered by the pulmonary artery, and is situate between this vessel and the right auricle. It measures above the valves ·6 inch, transverse diameter. At the descending portion of the arch, anterior to the origin of the arterial duct, the vessel is slightly contracted, measuring at this spot, as well as before the innominate trunk, ·43 inch. The aorta gives off its coronary branches, very large, in the ordinary manner. The arteries

of the arch also arise without any irregularity either in their number or position. From the upper and posterior aspect of the vessel, just beyond the arch, five small arteries, of the usual calibre, arise, probably bronchial, and œsophageal or thymic. Posteriorly the intercostal branches, also of normal calibre, are given off in the ordinary manner. The semilunar valves of the aorta are three in number, and manifestly competent, being normal in size and structure. The pulmonary artery is very large, measuring just above the valves one inch in diameter, and immediately at the point of division 1·1 inch. It springs from the anterior part of the left ventricle, the aorta being close to it on its right, and the tip of the left auricle on its left side. It divides, in the usual manner, into its two branches. The branch to the right lung measures transversely ·6 inch; that to the left lung ·55 inch. The three semilunar valves of the artery are of correspondingly large size and strength. The ductus arteriosus is completely closed. The fibrous cord representing it extends from the upper side of the pulmonary artery, close to the origin of its left branch, to the under side of the aorta, a little beyond the origin of the left subclavian artery. The right auricle is dilated and hypertrophied. Its walls measure at the thickest part, close to the entrance of ths superior cava, ·12 inch. The size of its cavity, from the tip of the auricle to the entrance of the inferior cava, is about 2 inches; from the auriculo-ventricular junction to the edge of cavity between the veins, 1·2 inch. The foramen ovale is largely patent when stretched, admitting a cone, ·45 inch; or, with ease, the tip of the little finger. There are distinct traces of the remains of the valve of the foramen. The superior and inferior cavæ enter the right auricle in the usual way. The position and size of the coronary and azygos veins are normal. The right ventricle is greatly hypertrophied, and its capacity diminished. The thickness of the walls at the base varies; the right wall measures ·5 inch; left wall close to the septum and at attachment both of aortic and mitral valves, ·7 inch; anteriorly, at the origin of aorta, ·25 inch. A very strong, fleshy column, ·25 inch by ·45 inch, from which the prin-

cipal papillary muscle arises, forms a kind of imperfect septum in the ventricle; midway, between apex and base, the wall is of uniform thickness, measuring ·33 inch. The left auricle is dilated; its diameter, from the base of the ventricle to the superior boundary, is 1·20 inch; and about the same diameter from the inter-auricular septum to the tip of the auricle. The pulmonary veins, four in number, are normal in situation, and equal in size, emptying themselves as usual into the left auricle. The left ventricle is in a state of dilated hypertrophy. At the base, close to the septum, the right wall measures ·37 inch; the left wall, ·23 inch; anteriorly, close to the pulmonary artery, 1 inch ·05; midway, between apex and base, ·28 inch. The principal papillary muscle in the left ventricle is larger than that of the right; the latter is round, and measures ·15 inch; the former irregularly square, ·30 inch diameter. The ventricular septum is perfect; its diameter is about ·40 inch. Both tricuspid and mitral orifices are manifestly competent. The right auriculo-ventricular orifice is oblate in form, and measures ·75 by ·4 inch. The tricuspid valve is of the usual form. The left auriculo-ventricular orifice is also oblate, measuring ·8 by ·4 inch. The mitral valve differs materially from the usual form, being really tricuspid. Its anterior cusp being attached to both of the posterior pulmonic valves, and to the wall at the base of the cavity, close to the auricular portion; the inner cusp is attached mainly to the septum; and the outer and posterior cusp mainly to the base of the ventricle. Notwithstanding this peculiarity of the mitral valve, the perfectly normal condition of the tricuspid valve in the right ventricle shows that the ventricles themselves were not transposed.

It will be seen from the above description that the only possible communication between the two sides of the heart, and consequently between the systemic and pulmonic circulation, was through the foramen ovale.

Remarks.—There are certain features in this case more or less common to the entire collection of cases of transposition of the vessels, which appear worthy of notice. Such are the

enlarged state of the thymus gland; the imperfect expansion of the left lung; pleuro-pericarditis; the tendency to exudation of black blood, and the condition of the nervous centres, *i. e.*, the apparent integrity of the cerebral functions, coexisting with diminished function of the spinal axis; and, eventually, the failing power of the sympathetic system as evidenced in the impaired nutrition of the body. And these points are all, more or less, inseparably connected with malformation of the heart generally.

An enlarged thymus gland has been noted by Duretus, Sandifort, Meckel, Gintrac, Cailliot, and Burns, and supposed by them to exercise a compensating influence.

So many cases of unexpanded and of imperfectly developed left lung have occurred, not only in transposition of the vessels, but in other malformations of the heart, that there would seem some casual relation between the two conditions. For original observations on this point, see Meckel, 'Handbuch der Patholog. Anat.,' B. i, s. 176; and Heyfelder, 'Studien im Gebiete der Heilwissenschaft,' B. i, s. 233.

The comparative frequency of pleuro-pericarditis would also justify the inference that malformed heart confers a special predisposition to the occurrence of such complication.

Exudation of black blood, either in the form of slight hæmorrhage from the mucous membranes, or in that of petechiæ and purpuric maculæ, or of aphthæ, is a very constant phenomenon. Heyfelder (op. cit., B. i, s. 228) has bestowed particular consideration upon this subject.

With respect to the cerebral functions, the admixture of black blood, even to a great extent in the nutrient vessels of the brain, does not appear in many cases to modify, in any perceptible degree, their normal manifestations. Indeed, some physicians, Lentin ('Beiträge,' B. ii, s. 70), have particularly noted the excellence of the intellect in the cyanotic patient. Sachse also records the instance of a cyanotic youth, at the age of twenty years, pursuing his studies at the university. Indeed, it conforms to our ordinary experience that cyanotic adults are but little, if at all, below the average standard of intelligence.

But while the cerebral functions remain in general un-

modified in transposition of the vessels, in nearly all the minutely recorded cases there has existed a diminished power of voluntary motion; in some cases shown by a simple inability to execute properly the healthy motions of the lower extremities; in others by the existence of actual paralysis of either upper or lower limbs. In every case, the patients have had an almost instinctive dread of voluntary movement, in consequence of such movement determining convulsive or syncopal paroxysms.

The sympathetic system appears, in the cases that have survived for any period, to have remained for a time without serious compromise. The growth of the body has proceeded normally, and the various functions have been naturally performed. But after a time, emaciation and general perverted nutrition have supervened, terminating in gradual exhaustion of the vital powers.

The collated cases of transposition of the great vessels of the heart amount, as nearly as the author can ascertain, to about forty-two in number. It is possible, however, that one or two of the cases may have been twice quoted in consequence of appearing at one time in the name of the observer, at another in that of the collator. To facilitate reference, they are arranged in a triple series; commencing with the most complex cases, and ending with those in which the transposed vessels were associated with the smallest deviation from the normal condition of the heart.

The first series includes those cases in which transposition of the vessels is associated with arrested development and malposition of the trunks of the main vessels; structural changes in the various orifices of the heart; deficiency of the ventricular septum; transposition of the ventricles and their valves.

The second series comprises the cases in which transposition of the vessels is accompanied by patency, both of the foramen ovale and of the ductus arteriosus.

The third series contains the few examples in which transposition of the vessels occurs with simple patency alone of the foramen ovale.

Series I.

	Observer.	For. ov.	Sep. vent.	Duct. arterios.	Duration of life.	Remarks.	Reference.
1	Stedman	Open	Open	Closed	7 m. 8 d.	Cyanosis after fourteen days. Right lung largest, left compressed. Pericarditis. Irreg. dist. of vessels of aortic arch. Pul. art. dilated above its mouth. Œdema and ascites	Lancet, 1841-2.
2	Bock	—	Open	Open	8 m.	Aorta arose from R. v. Pul. art. over sep. vent.	Freidberg, op. cit.
3	Meckel	Open	Open	Open	2 d.	In a lamb	Tab. Anat. Path.
4	Wilkinson King	Open	Open	Closed	2 y. 9 m.	Cyanosis. Pul. art. wide; aorta small below duct; only two veins entered left aur. Never walked	Monthly Journ. of Med. Sc., vol. iv.
5	Nasse	Open	Open	—	19 y.	Cyanosis. Convulsions	Leichen offnungen 1ter Theil, 1821.
6	Meckel	—	Open	—	—	Bicephalous calf	Tab. Anat. Path.
7	Thore	Open	Rud.	—	11 d.	No cyanosis	Arch. Gen., s.iv, t. 1, 1843.
8	Otto	Open	Absent	Absent	7 m. fœtus	Pul. art. too small	Selt. Beobachtungen.

9	Mauran	Sep. abs.	ditto	Br. of P. a.	—	Pul. art. impervious at its origin	Freidberg, op. cit.
10	Breschet	ditto	ditto	Abnormal	—	Duct. art. was a long, slender canal between right branch of P. a. and right subclav. P. a. contracted	Otto. Selt. Beobach.
11	Lawrence	ditto	ditto	—	—	P. a. contracted	——
12	Langstaff	Closed	—	Nor. width	10 w.	P. a. branch of descending aorta	Lond. Med. Rev., v. 4.
13	Kreysig	ditto	—	—	—	P. a. branch of descending aorta. Tricuspid orifice closed	Krank. des Herz, B. iii.
14	Valleix	Small chink	Open	—	8 d.	Inver. of viscera. Tricuspid orifice closed	Arch. Gen., s. ii, t. 8.
15	Müller	Three small chinks	Open	—	1 y.	P. a. contracted	Horn's Archiv, 1822.
16	Farre	Open	Absent	Br. of P. a.	79 h.	P. a. imperfect. Aorta arises over sep. vent.	Malf. of Heart.
17	Raoul-Chassinat	—	Open	Open. Crow quill into left P. a.	12 d.	P. a. rudimentary. Defective right aur. and vent.	Friedberg, op. cit.
18	Martin	Wide open	Open, two lines	Nearly obliterated	10 w.	Common aur. and vent. from which the great vessels transposed arose. No cyanosis	Müller's Archiv, s. 222, 1859.
19	Farre	Imperfectly closed; val. perforated	—	Contracted	5 m.	P. a. contracted. Cyanosis	Malf. of Heart.

	Observer.	For. ov.	Sep. vent.	Duct. arterios.	Duration of life.	Remarks.	Reference.
20	Boyer	Open	—	Closed in part	2 m.	P. a. connected with right vent. Aorta arose above aperture in septum, and communicated with both vent. Cavæ entered left and pul. veins right aur. viscera, generally reversed	Peacock, op. cit.
21	Worthington	—	—	—	—	Similar case	Idem.
22	Hess	Closed	—	Probably open	8 m.	Numerous abnormal conditions, occasional lividity only. Male	Idem.
23	Burkart	—	—	—	—	———	De Monst. Notab. Friburg. 1825.
24	Johnson	—	—	—	2 m.	Male	Amer. Journal. of Med. Sc., new ser., vol. xx.
25 and 26	Stolz	—	—	—	—	Two cases. 1st case, infant lived five days; 2nd case, thirty-seven days	Gaz. Méd. de Strasburg, quoted by Peacock, op. cit.
27	Hasse	—	—	—	—	Probably, defective aur. and vent.	Freidberg, op. cit.
				SERIES II.			
28	Baillie	Slightly closed	—	Size, large enough to admit crow-quill	2 m.	Cyanosis. No dyspnœa. Heart of natural size. Child healthy	Morbid Anatomy, Fasc 1st.

29	Duerest	Open	Perfect	Open	10 h.	Cyanosis. Well formed. Female	Archiv Gén. 3me et nouvelle série, t. 9, 1840.
30	Guy's Museum, 1392[40]	Open	ditto	Open	—	———	———
31	Walshe	Open	ditto	Open	10 m.	Cyanosis. Ventricle transposed. Male	Med.-Chir. Trans., 1842.
32	Tiedemann	Wide open	ditto	Open, largely	12 d.	———	Zeitschrift, 1825.
33	Keil	Slightly open	ditto	Pretty wide	35 h.	———	Diss. Würtzburg, 1825.
34	Ogier Ward	Open	ditto	Open	18 d.	Cyanosis from birth. Dyspnœa. Difficulty in sucking. Lungs engorged and imperfectly expanded	Peacock, op. cit.
35	Coligny	Nearly closed	—	—	—	———	Pize, op. cit.
36	Meyer	Open, two lines	ditto	Open	1 m.	———	Virchow's Archiv, B. xii, 4, 5 Heft.
37	Beck	Open	ditto	Open	75 h.	———	Archiv für Phy. Heilkund, B. v, 1856.
38	Ribes	Open	—	—	3 y.	Left chamber contracted	Pize, op. cit.
39	Duges	—	—	Open	—	———	Jour. Gén. de Méd., vol. ci, p. 88.

Some of the cases quoted in the first and second series may be imperfectly classified, in consequence of the extremely meager details furnished by the writers quoting them; frequently a bare mention of the case as one of transposition being alone found. These cases the author has not been able to consult in the original records.

Series III.

(For further details, see Table at pp. 206, 207.)

	Observer.	For. ov.	Sep. vent.	Duct. arterios.	Duration of life.	Remarks.	Reference.
40	Gamage[1]	Open largely	No mention	No trace	15 w.	Inver. of viscera. Cyanosis after some days; irreg. dist. of vess. of arch; pulmonary artery relatively large; muscular debility; aphthæ	New Eng. Jour. of Med. and Sur., vol. iv.
41	D'Alton	ditto	Perfect	Closed	1½ y.	Cyanosis beginning of third month. Pulmonary artery very large	Dissert. de Cyanopath., 1824.
42	Wistar	ditto	ditto	ditto	2½ y.	Pulmonary artery large. Cyanosis	Sys. of Anatomy, vol. ii p. 75.
43	Author	ditto	ditto	ditto	2 y. 8 m.	Ditto. Cyanosis	——

[1] Although the case of *Gamage* was conjoined with transposition of the viscera and cardiac ventricles, it is included in this series, as it conforms to the cases therein comprised in most particulars. The condition of the ventricular septum not being named, it must be inferred that it presented no abnormal condition.

The cases comprising this last series, though smallest in number, yet offer the fewest disturbing elements. In an anatomico-physiological sense, their characteristic consists, as stated in an open foramen ovale, associated with transposition of the vessels. The arterial duct is closed; no imperfection of the ventricular septum, or change, so far as can be learned from their detail, either in respect of size or origin of other vessels, compensating for such closure.[1] They are four; those of Gamage, Wistar, D'Alton, and the author. The following table shows how perfectly they coincide in every important particular; at least in all such as have been noted by the observer.

[1] It is hardly necessary to observe how carefully the branches given off by the thoracic aorta below the arch should be examined, not only in cases of transposition of the vessels, but in those of malformation of the heart generally, with the view to determine how far they could have exercised a compensating influence. Chevers ('Morbid Conditions of the Pulmonary Artery,' p. 18) has already insisted upon this point. In some cases, the vicarious action of these vessels is shown beyond doubt. In an instance of obstructed pulmonic orifice recorded by Gerstel (Friedberg, op. cit., p. 132), the bronchial arteries were so greatly enlarged, and as it were varicose, as to form an extensive network.

The manner in which the vessels arise from the arch should also be noted, inasmuch as several cases of transposition were accompanied with irregular origin of the vessels (Walshe, op. cit.). In D'Alton's case the origin and distribution of these vessels were normal; the innominate trunk, however, he mentions as being short. In the author's case these vessels were normal.

TABLE.—*Detailed account of the Cases in Group III, in which there was Transposition of the Great Vessels, the Foramen Ovale alone being open.*

GAMAGE'S case.	WISTAR'S case.	D'ALTON'S case.	The AUTHOR'S case.
Female.—Lived fifteen weeks.	*Male.*—Lived two years and six months. Average stature.	*Female.*—Lived one year and six months. Average stature.	*Male.*—Lived two years and eight months. Average stature.
Healthy until second month, but weak in limbs.	———	Healthy until third month.	Healthy until third month.
Cyanosis from birth, but much increased after second month.	Cyanosis, advent not stated.	Cyanosis beginning of third month.	Cyanosis end of third month.
———	———	Dentition easy.	Dentition easy.
Distressing cough and dyspnœa.	Dyspnœa.	Cough and dyspnœa.	Cough and dyspnœa.
Cyanotic tint deepening under effort.	Cyanotic tint deepening under slight dyspnœa, emotion, or effort.	Cyanotic tint deepening under emotion.	Cyanotic tint deepening under emotion.
———	———	Sensitive to cold.	Sensitive to cold.
———	———	Increased cardiac impulse.	Increased cardiac impulse.
———	———	Occasional diarrhœa.	Occasional diarrhœa.
Cerebral functions impaired (?).	———	Cerebral functions normal.	Cerebral functions normal.
Voluntary motion greatly impaired; right arm paralysed; eyes glassy.	Voluntary motion impaired.	Voluntary motion impaired.	Voluntary motion impaired.

———	———	Latterly, difficulty in sucking.	Latterly, difficulty in sucking.
———	———	Emaciation.	Emaciation.
Aphthæ over mouth and nates.	———	Aphthæ discharging black blood.	Petechiæ over body.
Severe convulsive attacks.	———	No convulsions.	No convulsions.
———	Œdema of legs and feet.	Œdema and ascites.	Œdema and ascites.
———	———	Death from exhaustion.	Death from exhaustion.
Foramen ovale open largely.	Foramen ovale open largely (eight or nine lines).	Foramen ovale open largely.	Foramen ovale open largely.
———	———	Valve wanting.	Valve existing.
———	———	Ventricular septum perfect.	Ventricular septum perfect.
Ductus arteriosus seemed never to have existed.	Ductus arteriosus closed.	Ductus arteriosus closed.	Ductus arteriosus closed.
Pulmonary artery large, relatively.	Pulmonary artery large.	Pulmonary artery large.	Pulmonary artery large.
Heart generally distended.	Heart dilated and hypertrophied.	Heart dilated and hypertrophied.	Heart dilated and hypertrophied.
———	———	Mitral valve tricuspid.	Mitral valve tricuspid.
———	———	Branches of aortic arch normal.	Branches of aortic arch normal.
Entrance of veins normal.	Entrance of veins normal.	Entrance of veins normal.	Entrance of veins normal.
———	———	Lungs healthy.	Left lung unexpanded in part.

For the general principles of arrangement and tabulation, and for much most valuable knowledge respecting the proximate cause of the malformation and irregularities of the large vessels generally, the author is indebted to the following authorities:

Sandifort, 'Obs. Anat. Patholog.,' vol. iii, liber 1—3.

Meckel, 'Handbuch der Patholog. Anat.,' Band i.

Otto, 'Pathol. Anat.,' p. 297.

Farre, 'Essay on the Malformation of the Human Heart.'

Ecker, 'Beschreibung einig. fäll. von anorm. Commun.,' 1839.

Albers, 'Atlas der Patholog. Anat.'

Burdach, 'Traité de Physiologie,' t. iii, p. 502.

Geoffrey St. Hilaire, 'Histoire des Anomalies,' &c., t. iii, p. 562.

Cruveilhier, 'Anat. Patholog.,' t. ii, p. 474.

Deguise, 'De la Cyanose Cardiaque,' &c., Thèse, 1843.

Pize, 'Consid. sur les Anom. Card. et Vascul.,' Thèse, 1854.

Gintrac, 'Sur la Cyanose,' 1824.

Kürschner, 'Comment. de Cord. &c.,' 1837.

Stille, "On Cyanosis," 'Amer. Jour. of Med. Scien.,' 1844.

Freidberg, 'Die angeb. Krank. des Herz.,' &c., 1844.

Kreysig, 'Krank. des Herz.,' B. iii.

Chevers, 'Morbid Conditions of the Pulmonary Artery,' 1851.

D'Alton, 'Dissert. de Cyanopath.,' &c., 1824.

Nasse, 'Archiv für die Physiol. Reil und Autenrieth,' B. x.

Walshe, 'Med.-Chir. Transactions,' vol. xxv.

Peacock, 'Malformations of the Human Heart,' 1858.

Meyer, 'Virchow's Archiv,' Band xii, 4tes und 5tes Heft, 1857.

Turner, 'Brit. and For. Med. Quart.,' July and October, 1862.

Wood, 'Path. Trans.,' vol. x, 1859.

Allen Thompson, "Case of right Aortic Arch.," 'Glasgow Med. Journ.,' April, 1863.

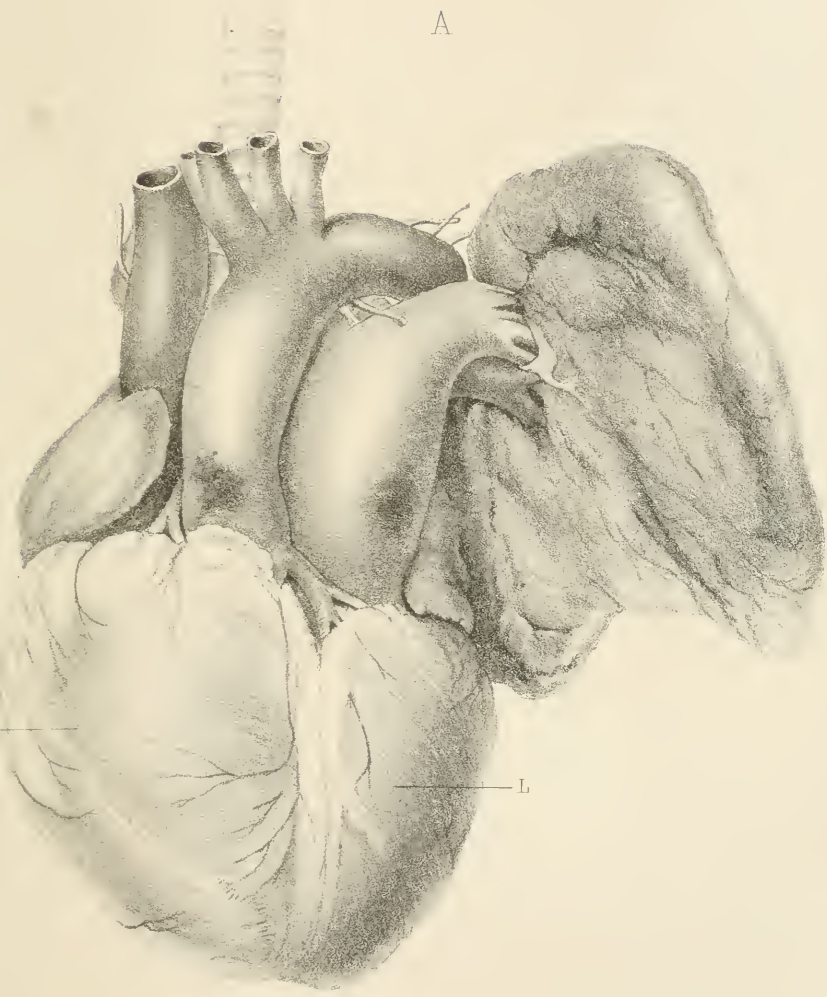
And the Handbooks of Rokitansky, Craigie, Engel, and Förster.

DESCRIPTION OF PLATES IX, X.

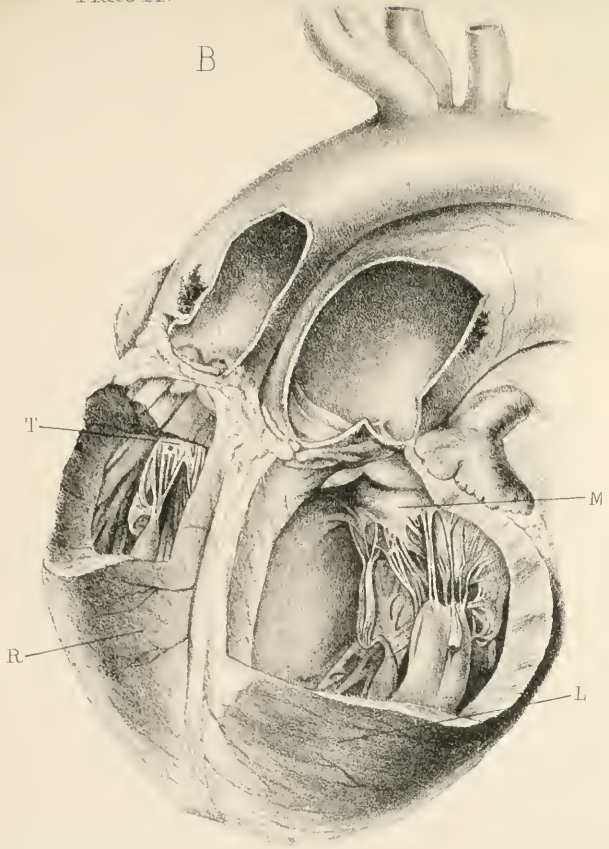
The plates represent a heart in which there is transposition of the great vessels, the foramen ovale being open.

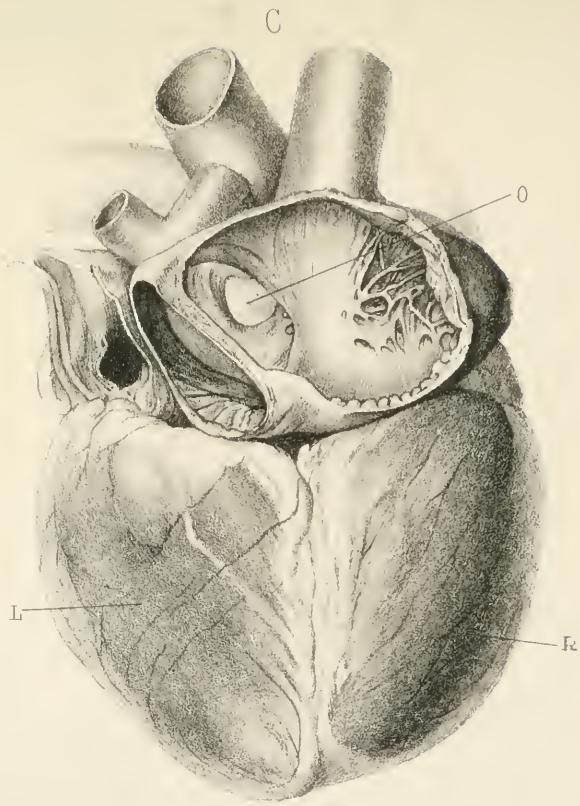
A. External view.
B. Internal view.
C. Posterior view.
R. Right ventricle, from which the aorta takes its origin.
L. Left ventricle, from which the pulmonary artery takes its origin.
M. Mitral valve, which presents three cusps.
T. Tricuspid valve.
O. Foramen ovale.

A



Harvey. O. Smith del. G.H.F. W. West imp





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A CASE

OF

POPLITEAL ANEURISM

CURED BY

DIGITAL COMPRESSION.

BY

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COMMUNICATED BY

DR. SIBSON.

Received June 12th.—Read June 23rd, 1863.

THOMAS S—, æt. 33, iron-moulder, Oldham, was admitted an in-patient of the Manchester Royal Infirmary, December 29th, 1862, with a large popliteal aneurism in the right leg.

He is of light complexion, pale-looking, and has evidently suffered much from struma, though his general health, as he states, has been good for several years past. Nine weeks ago, he began to feel a dull aching pain of the right knee, extending round the joint, but more especially at the back part. The pain was intermittent, and varied in its severity. Attributing it to rheumatism, he obtained a liniment from a druggist. Does not recollect when the swelling and pulsation first appeared in the popliteal space, but a few days

before his admission the parts had become so painful, that he applied to Mr. A. Leach of Oldham, who, recognising the serious nature of the case, advised his immediate removal to the hospital.

On his admission, there was general swelling of the leg. The popliteal space was distended with a pulsating tumour, the form of which could not be distinctly defined, owing to the œdematous state of the surrounding parts. The pulsation was very perceptible, but feeble, and the skin covering the tumour slightly discoloured. His countenance bore indications of acute suffering; pulse small and quick, 120; appetite poor, having taken but a small quantity of tea and gruel for several days.

The case appeared so urgent, that two tourniquets were immediately applied over the femoral artery; the limb was enveloped in flannel bandages and elevated on pillows. Hot-water bottles were applied near the foot and leg, to raise their temperature to the natural standard.

On visiting him the following day, I found he had been able to bear the instruments tolerably well, though they had caused redness of the skin and slight vesication under one of them, in spite of the usual care and precaution to prevent undue pressure.

The tourniquets were removed, as the integuments were evidently not in a fit state to bear that form of compression.

Iodide of potassium was now prescribed in five-grain doses, three times a day, and a pill containing half a grain of morphine and three of extract of henbane at night, to relieve the general restlessness and pain.

On the 3rd of January, the dose of the iodide of potassium was increased to ten grains, and was regularly taken until the 20th of January. This plan of treatment was not followed by any improvement, for the tumour had increased in size, though the œdema of the limb had partially subsided. Its form, however, could be more accurately defined. In shape, oblong, its longest diameter was about six inches, extending upwards, and the measurement of the limb over the tumour itself was twice the natural size. The skin was still red

and the pulsation in no respect improved. The man's general health was evidently giving way, his tongue being furred and dry, the bowels disordered, accompanied by great nervous irritability.

Digital compression now appeared to me the most desirable course to adopt; and several students having volunteered their services, the treatment was commenced on the 20th of January at 4 p.m. During the first twenty hours this system of pressure was frequently interrupted from some misunderstanding in the arrangements, therefore, the following morning, the pulsation in the tumour had apparently undergone no change. Two students were consequently directed to be constantly with the patient—one to compress the artery, the other to apply his hand over the aneurism to detect any insufficiency of the pressure. This plan was pursued for twenty-four hours. A very slight pulsation could then only be felt in the tumour; which in six hours later had entirely subsided. Moderate pressure was, however, kept up for another day and then discontinued, as there were no signs of any return of the pulsation.

From the feebleness of the circulation, some time elapsed before the limb was restored to its natural temperature, and though its position was frequently changed to prevent sloughing, two small ulcers formed near the ankle, which prevented the patient walking for a month.

At the end of this time he began to take regular exercise, his general health improved, and the tumour continued to diminish in size.

He left the hospital on the 4th of April, feeling himself sufficiently well to return to his usual occupation, a slight thickening of the parts in the popliteal space being the only remaining trace of the disease.

Remarks.—The reasons which induced me to prefer compression to ligature of the femoral artery in the treatment of this case, are sufficiently obvious, as few enlightened surgeons would in the present day resort to the latter, except under peculiar circumstances, in aneurisms involving the principal vessel of the extremities. But though compres-

sion may be regarded as the best plan to adopt, yet the manner of its application is still a subject for discussion.

Success in several previous cases induced me first to try instrumental pressure. It soon became evident, however, that the vitality of the limb was too much impaired to admit of this treatment. Indeed, the unusual size of the tumour, the unsatisfactory condition of the surrounding parts, as well as of the patient's general health, formed in themselves serious obstacles to any kind of operative interference.

The iodide of potassium having been recently reported by M. Bouillaud [1] to have cured an aneurism of the carotid, this remedy was administered to the patient for upwards of three weeks; but the sac continuing to increase in size, the pulsation becoming more distinct over its entire surface, and the constitutional symptoms more aggravated, it was thought desirable to discontinue it. Digital pressure was now determined on, which caused consolidation of the swelling in fifty hours, though during the first twenty it was only partially applied.

The satisfactory result of this simple plan of dealing with such a formidable disease was doubtless due to the care with which the compression was kept up by the students, all of whom took a deep interest in the case. And in other instances of this disease, where similar assistance can be obtained, I feel persuaded the issue will be equally successful, for all who had seen my patient considered his case very unfavorable for any kind of treatment.

Many are the advantages of digital over instrumental compression. Not only does it seem to effect a cure in a short space of time, but with much less pain; and is less likely to lead to sloughing of the structures under pressure, which with the greatest precaution is liable to occur in some cases. The flow of blood through the aneurismal sac may probably not be so effectually prevented by this means, and indeed this is not to be desired, as fibrillation of the blood

[1] 'L'Union Med.,' tome i, p. 436, 1859. For a *résumé* of all the facts relating to the iodide of potassium in the treatment of aneurism, see a paper by Dr. Roberts, 'Brit. Med. Journal,' 1863, vol. i, p. 83.

is more likely to occur and to be more permanent, if allowed to pass through the swelling in small quantity, and in a slow continuous stream. For digital pressure is not liable to the sudden alternations in force and volume which under instrumental pressure is apt to take place, in consequence of the tendency of the artery to escape from under the tourniquets on any slight movement of the limb.

When a sufficient relay of assistants cannot be obtained to complete the cure by finger pressure alone, there need be no objection to the occasional use of instruments, or even, when practicable, to the flexion treatment recommended by Mr. E. Hart.

The pressure itself may be discontinued for a short time, when it causes severe pain or interferes much with the functions of the surrounding parts; and this I consider a point of considerable importance, showing, as it does, that digital compression is applicable to aneurisms where instrumental is not feasible.

Already there are on record two cases of aneurism of the ophthalmic artery successfully treated by intermittent digital pressure of the carotid, by Drs. Gioppi and Vanzetti, of Padua. In one, the carotid was compressed for periods of one or two minutes at frequent intervals, and at the end of four days all pulsation in the tumour had ceased. In the other, pressure was applied for five minutes at a time, and the cure was completed in eighteen days.[1]

It is, therefore, to be expected that iliac and axillary aneurisms will, in some instances, yield to this method of treatment; at least it should be tried in such cases before the patient is exposed to the dangerous operation of ligature.

These brilliant results of modern surgery must not, however, induce us to trust entirely to the system of pressure in the treatment of aneurism. For, as success depends on the consolidation and subsequent absorption of the blood in the tumour, other agents must be sought for to combine with it, possessing similar properties.

Hitherto the information derived from physiology and

[1] Holmes' 'System of Surgery,' vol. iii, pp. 422, 423, 1862.

chemistry in reference to this subject has been of an unsatisfactory character; some parties asserting that nutritious food is the best regimen for the purpose, whilst others are advocates for low diet and starvation.

Nor has any medicine been discovered capable of effecting the object, for those usually prescribed lessen the force and frequency of the circulation rather than alter the state of the blood itself. This difficulty in arriving at correct views of the medical treatment of aneurism, is perhaps in a great measure owing to our imperfect knowledge of the changes which contribute to the solidification of the aneurismal contents. The process is usually regarded as similar to the coagulation of the blood out of the body; but it is questionable if this be exactly so where the solidified material is afterwards partially absorbed or converted into structure.

Ordinary coagulation of the blood is one consequence of its diminished vitality, and therefore its removal from the body is more likely to be effected by ulceration and suppuration than by absorption.

It seems, therefore, highly probable that the solidification of the blood within the body previously to its absorption or conversion into tissue, differs somewhat at least from that of ordinary coagulation. And this may explain how low diet, which, by depressing the vital properties of the blood, should promote its coagulation, has not been followed by those salutary results expected by its advocates in the treatment of aneurism.

CASES

OF

ICHTHYOSIS SPURIA VEL SEBACEA.

BY

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Received June 17th.—Read June 23rd, 1863.

It is, I believe, commonly agreed that the term ichthyosis 'vera' should be restricted to cases in which the surface of the body assumes more or less the character of that of certain fishes, by reason of a diseased condition of the papillary and epidermal elements of the skin. In this condition, the superficial scaly and scabrous appearance, modified as it may be in various subjects according to circumstances, is due to an increased amount and altered state of the epidermis. The term ichthyosis sebacea or spurious ichthyosis is, on the contrary, applied to a class of cases in which there exists a somewhat similar appearance[1] to the above-mentioned condition of the surface of the body, which is, however, due (not to any affection of the skin itself or of the epidermis, but) to an increased and unhealthy secretion

[1] Mr. Erasmus Wilson very justly describes the appearance of the ichthyosis sebacea as reminding one of the skin of the saurian reptile rather than of that of the fish; and therefore adopts the term sauriderma as synonymous with ichthyosis sebacea.

of the proper sebaceous matter of the follicles. This augmented secretion accumulating, "caking"' (so to say), becoming indurated and discoloured by dust admixed, becomes also adherent to, although having no organic connection with, the subjacent surface of the skin; and the skin proper, though not in any way primarily or fundamentally affected, may yet in a secondary manner become irritated or inflamed by contact with the depraved secretion, and even assume the appearances of some active disease such as eczema.

Both forms of ichthyosis are happily tolerably infrequent in this island, and it is their comparative rareness[1] which induces me to bring before this Socicty the following cases, two of which came under my care in St. George's Hospital in the month of August, 1861.

The two cases alluded to occurred in the persons of two sisters, aged respectively ten and fourteen years, from an outlying hamlet a few miles distant from London, enjoying good general health, and comely in look. It appeared that they had both been vaccinated five years previously, and that after vaccination they both had become the subjects of a scattered pustular eruption on various parts of the body, which assumed the form of open and unhealthy sores. These sores disappeared in the course of some time, and then a roughness and hardness became noticeable about the arms and down the legs, and subsequently just above the axillæ, on the chest, and on the upper arms near the elbows. This condition gradually increased until it assumed the appearances presented by the patients on their admission into the hospital, which was as follows:

Description of the arms and legs.—Large patches of the skin on the front of the chest immediately above the axillæ, as also on both sides of the trunk over the false ribs, and about both knees, as also down both legs (especially in the neighbourhood of the ankles) as well as on the dorsum of the feet, were of a brown colour, so dark in some parts as to

[1] I cannot, upon inquiry, find that the practice of St. George's Hospital has, until now, ever produced a single case of this affection during the experience of those now connected with it.

be almost black. These discoloured portions were very rough and indurated, owing to masses of dry material covering the surface of the skin, which had the appearance, in consequence of the movement of the parts, of having become broken into scales or small tabular or lozenge-shaped patches, chiefly of a square form, and divided by deep lines according to the natural creasings of the skin. Owing to these concretions the surface was extremely dry and harsh. Down the legs and arms the concretion had less of a scaly form, and more of a papillary character. In some parts at the sides of the knees the affected portions reminded one of the dried and roughened sole of the fowl's foot. After a time these tabular scales became loosened, as will be described further on.

Course and treatment of the disease.—The two patients were placed on ordinary diet, with porter. At first I gave to both of them the liquor galii aparines every six hours, and had them put in a warm bath daily. Subsequent to the warm bath each day, the whole skin was well rubbed over with plain lard. Under these means the indurated and desiccated scales soon became loosened, and began to fall away from the skin, being found in abundance in the patients' beds. I soon discontinued the liquor galii, wishing to rely solely on local remedies; and continuing the daily warm bath, substituted a lotion of diluted liquor potassæ for the rubbing in of lard. This lotion was applied freely, and appeared to induce even a quicker removal of the sebaceous matter than did the application of the lard: so that by degrees the whole of the caked sebaceous matter was quite removed from the skin, which, though for a time it remained rather harsh and reddened, and somewhat tender, eventually regained its natural colour and suppleness. This was so with both the girls, who, accordingly, were discharged, in about five weeks, quite free from the affection, and with instructions again to visit the hospital in case that appearances of any return of the ailment manifested themselves. This recommendation as respects one of the patients was taken; for on going into one of the wards of the hospital in December last, I acci-

dentally met with the youngest of the two sisters as an inmate under the care of my colleague, Dr. Fuller, for the same disease as before. It appeared, upon inquiry, that both she and her sister had remained scot-free from the skin disease for between three and four months after leaving the hospital; but after that period they both became affected by a return of it, and exactly in the same parts as when they were first attacked.

Its recurrence was, however, not preceded by any ulcers of the skin as on the former occasion. This patient during her second sojourn in the hospital became quite free from the ichthyosis under the use of arsenic and hot baths, and the liq. galii aparines, but the skin remained unusually red and glazed, and disposed to crack.

With regard to the ultimate composition of the sebaceous concretion which was loosened and removed from the skin, I was anxious to ascertain how far it might correspond with an analysis made some years ago by Dr. Owen Rees of a black sebaceous secretion from a patient whose case is related by Mr. Erasmus Wilson in the fifth edition of his work 'On Diseases of the Skin;' and accordingly asked my friend Dr. Harvey, our medical registrar at St. George's Hospital, kindly to undertake the examination of a quantity of it. The account which he gives me of its chemical character is as follows:

Chemical examination.—On incineration, 8 per cent. of ash was obtained. Ether readily dissolved out a very large quantity of fat. Caustic potash dissolved an albuminous substance which was precipitated by acid. In the ash were detected lime, soda, sulphuric acid, phosphoric acid, and iron. The result of this analysis does not materially differ from that obtained by Dr. O. Rees.

Microscopical examination of the scales from the skin.—On examination with the half-inch eye-piece, the small scales had a brownish colour, and semi-opaque appearance, and presented an irregular outline, and a surface without any definite structural character. With a higher power (the quarter-inch) the edges of the portions when teazed

Plate XI

Med. Chir. Trans. vol. lxxiv.

DF Westmacott del. J.H.J.

W. Wass. imp.

out (after being softened with water) were seen to present a striated and wavy character; and the general mass, chiefly structureless and homogeneous, was found to contain, in addition to what was no doubt "dirt" admixed, a number of irregularly-shaped, but mainly round and oval, reddish-coloured, solid-looking bodies, having a crystalline appearance, along with numbers of evidently old and worn-out epithelial cells. On the addition of dilute acetic acid, much of the striated character above described was obviously due to layers of epithelium compressed closely together, which swelled out and became of a much paler colour. The amorphous material also became much paler, and presented numbers of irregularly-shaped bodies, some being very minute and of a rod-shape, others being not unlike altered nuclei. A quantity of the material showing the linear parallel and wavy lines was seen not to be altered by the addition of the dilute acetic acid, the fibrillar elements remaining as before. Nothing existed more resembling a structural formation. On adding dilute liquor potassæ, the entire structure became much softened and reduced to a pulpy mass, in which much of the striated or fibrillar character was quite lost.

The general appearances of the diseased skin in these two patients may be seen in the drawing of one of the feet (see Plate XI), which I had made by Dr. Westmacott. This gentleman has informed me that the only other drawing of the same diseased condition which, in his large experience, he has made or ever saw, was executed by him in Canada, in 1849, and taken from the case of a woman aged eighty years, whose legs were, in addition to the disease in question, the seat of dusky-coloured scars and stains of old ulcers.

I would, in conclusion, take the liberty of alluding to an interesting instance of the same affection related in the 'Annalen des Charité Krankenhauses,' Bd. ix, Hft. i, p. 89, by Dr. R. Biefel, in connection with which the author considers the literature of the disease. This case is illustrated by drawings, one of which, showing a magnified view of a patch of the diseased part, very remarkably resembled Dr.

Westmacott's drawing of the old Canadian woman's foot. In the instance related by Dr. Biefel, however, it will be seen that the subcutaneous tissues subsequently became deeply affected, and thus the entire diseased parts greatly modified. Judging from the condition which the skin, in the little patient's case above related, was beginning to assume when she was discharged from the hospital after her second visit, it seems not improbable that in her case also the proper textures of the skin may, under repeated attacks of this spurious ichthyosis, become the seat of organic changes, as in the case related by Dr. Biefel.

DESCRIPTION OF PLATE XI.

Ichthyosis sebacea in the foot of a young girl, Martha B—,who was under Dr. John W. Ogle's care in St. George's Hospital, August, 1861.

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